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116 PAGES MONTHLY

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Challenging traditional  
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# Be a hero: shun NFTs in video games

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**J**ust as it felt like humanity was starting to understand that we urgently needed to steer the runaway donkey cart away from Total Environmental Collapse Avenue and instead down Pretty Chill Street, along comes the blockchain to utterly ruin everything, for no real tangible reason whatsoever. God, I'm angry about this.

That's right! It's the blockchain, the gut-wrenching waste of everyone's time that's responsible for pumping out enough CO2 emissions in 2021 to negate the entire global net savings from all the people who forked out loads of money for overly expensive electric vehicles. The blockchain produces the same yearly electrical output as a country the size of Argentina. Great job, humanity. Well done. Big clap.

And now, here comes the blockchain to start messing up your video games as well, as several big companies (namely Ubisoft and Square Enix) meekly dip their toe in the murky waters of public opinion, to try and determine whether NFTs should or should not be a thing, only to be met with the kind of resounding and hearty all-caps "NO!" that hasn't been seen since the backlash to Bethesda's Horse Armor DLC for *The Elder Scrolls IV: Oblivion*, which happened anyway and single-handedly messed up great swathes of the video game industry with grotty microtransactions and icky 'Free to Play'-ness. No one wants it, but that's not going to stop them because there's a sliver of the population who'll fall for it, and you know what that means? That means *big bucks*, so stuff the consequences.

Ubisoft's efforts thus far seem to be focused on the video game staple of hats: buy an NFT hat, and that hat's yours. No one else can own it. But it's



**DAN MARSHALL**

Dan Marshall set up *Size Five Games* in 2008 before selling indie games online was really a thing. His most recent smash-hit indie game was *Lair of the Clockwork God*.

not like you're getting a visually unique hat; no, it's exactly the same as any other hat, it's just that yours has a teeny-tiny ID number etched on it, something that's functionally useless and impossible to see during gameplay. Is that really worth raising global temperatures and flooding entire seaside villages for? I'd argue that it isn't.

Video games are transient: we largely play games only until another better, shinier one comes along. They never last forever, and even the big hitters get old and fall by the wayside eventually. If you'd have bought an NFT loincloth for your Level 55 Orc Mage in 2004, even if you were a die-hard fan of the game, be honest – you'd have long forgotten you even owned it by now. Another little slice of rainforest, gone, for nothing.

I was at the Develop conference last year. It's a lovely event where game devs get together and excitedly share what they're working on. While there, I met with several people who in the same breath as telling me they were working on something blockchain-related, also apologised. All of them. "I'm working on a blockchain game, I'm really sorry, please don't hate me. Ha ha!" What a business pitch. What a strategy. What a way to live your life, grovelling and apologetic because you're a net drain on society.

Look, let's all be honest: the blockchain brings zero tangible benefits to video games, but it does bring a whole host of environmental catastrophes. The only solution to this is to not buy any games that feature NFTs. Don't buy any games by companies that support NFTs. Shunning NFTs is a downright heroic move, and we all need to put our collective feet down now, before it's too late. Or is it already too late? Deep down, it feels a bit like it's already too late, doesn't it? 🐼

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**#59**



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**WELCOME**

In a change to our regular programming, we don't have a video game on the cover of this month's issue. Instead, we're highlighting *AKUMA* – an upcoming short film that's all elaborate samurai hats, raging fires, and flashing blades. Why? Because London-based studio Dimension has used a combination of Epic's Unreal Engine 4 and MetaHuman Creator to bring *AKUMA* to life. It's the perfect illustration of what can be done with those tools – and a signifier, perhaps, of where independent video games and film production could be headed in the months and years to come.

Where studios working to a tight budget might once have had to find artful ways of avoiding putting detailed, humanoid characters in their games, they can now use MetaHuman to freely add textured, fully rigged digital people to their projects. Of course, not all games (or short films) require hyper-real human characters, and tools are only as effective as the people who use them. But in the right hands, MetaHuman Creator could prove to be revolutionary – and it's still early days for the cloud-based app yet. You can find out about Epic's future plans for the platform in our interview on page 6.

Meanwhile, I have to bid a fond farewell to features editor Ian Dransfield, who heads off for pastures new this month. He's been a part of the magazine almost from the beginning, and the old place won't be the same without him. Godspeed, Ian!

Ryan Lambie  
Editor



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# PEOPLE POWER

Epic Games' Paul Doyle takes us behind the scenes on **MetaHuman Creator** – the digital human maker that could change the face of the games industry

**S**amuel Shepard. Nathan Drake. Lara Croft. Until recently, 3D characters like these were largely the preserve of the industry's biggest game developers – the time and expertise that goes into building realistic human characters being far beyond the budgetary grasp of most indie studios. All that could be set to change, however, with the advent of Epic Games' MetaHuman Creator.

The cloud-based app made its Early Access debut last year, and allows its users to freely create digital humans which are fully textured, rigged, and ready to animate. MetaHuman has already been

used by the likes of Italy's LKA, the studio behind the upcoming *Martha Is Dead*, our cover game from issue 49 (turn to page 68 for more on how it was used). It's also been seized on by movie-makers: that samurai warrior peering out from this month's cover? That's a shot from *AKUMA*, a short film currently being made by Dimension Studio – you'll find out more about that on page 12.

MetaHuman's potential uses, then, are enormous – and it's still early days for the application yet. To discover more on how it works, future updates, and thoughts on the uncanny valley, we spoke to Epic Games' senior director of product marketing and business strategy, Paul Doyle. ➔



The impressive thing about MetaHuman is how instinctive it is to use – if you’ve ever created a character at the start of an action RPG or something, you’ll probably be able to create a character in this. Did a lot of work go into making that streamlined interface?

**Paul Doyle:** We always had a view that it’s no good being easy to use if the fidelity isn’t there. So we had this objective, which was we have to be as good as anything else on the market for triple-A game characters, short of things like Ellie, the lead in *The Last of Us Part II*, where it’s a 4D capture of a specific performer, so basically a re-creation of a real person. Epic always has this view that the fidelity has to be there and be best in class. And then from there, it’s about, ‘OK, how usable can we make this?’

Our objective was, anyone should be able to make a believable digital human. We knew that making a specific digital human would be much harder, and some of that’s

## “Our objective was, anyone should be able to make a digital human”

just because of Covid – the number of people we’ve been able to scan to create the back-end database, which serves all of this, our ability to add lots and lots of people to that, got cut off at the knees for the last two years. Although that will pick up next year. With the interface, we put it somewhat

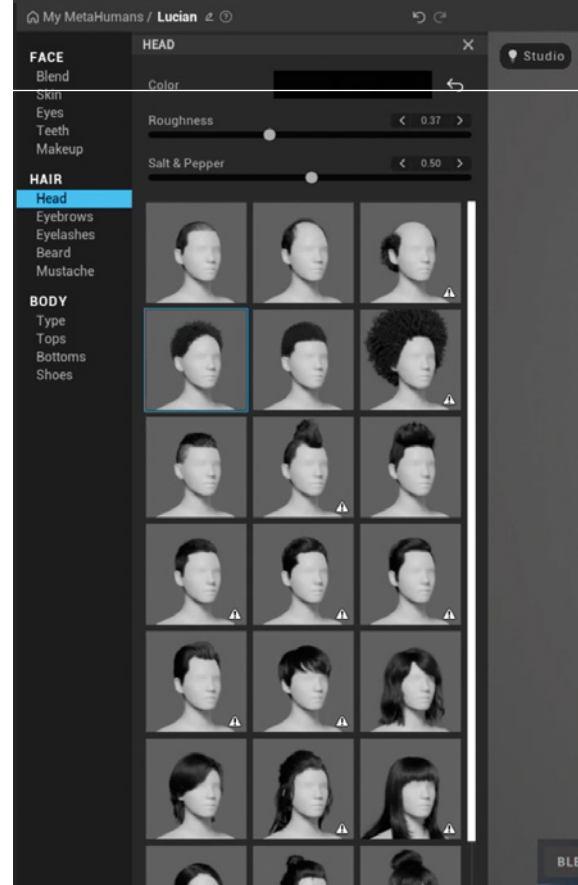
on rails, because we had this view that you should never be able to create something implausible, which inherently means there’s certain safety rails in place.

So what’s happening behind the scenes? You’ve scanned real people, but is the MetaHuman system then mixing and matching features from those people to create new faces?

**PD:** It’s really complicated what’s going on in the background. You can’t re-create any of the people that were scanned as part of the database – that’s not possible. The problem with the way you describe it is, it sounds somewhat Frankenstein’s monster-esque, whereas actually, when you’re putting it together, it’s always kind of coherent and implausible. It’s not just ‘tack on an old man’s ear...’

The ear’s an interesting thing, actually, because you can see how different the geometry is in each ear type, and how

MetaHuman blends between them. That’s when you see a lot of the work that goes into it. So from a relatively small set of scanned likenesses, there are thousands and thousands of possible outcomes that you can get to in a few minutes. And that’s before you even get into texturing and hair.

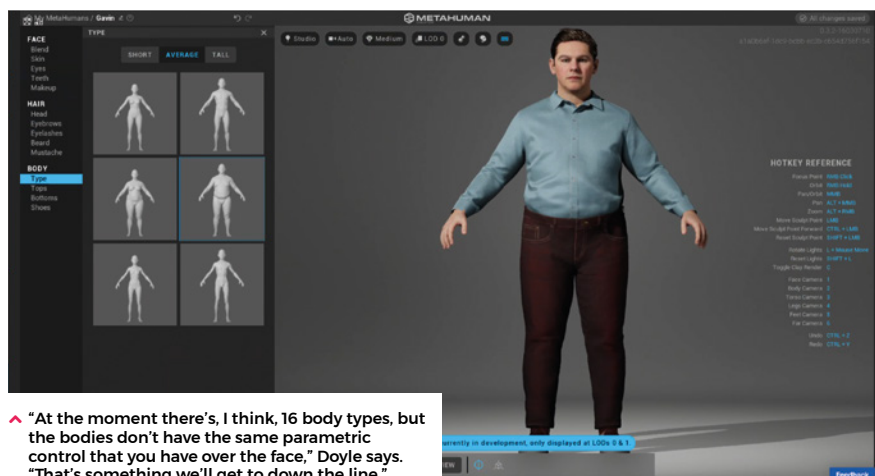


But there’s some sort of machine learning aspect to the way that that works?

**PD:** Yeah, there’s work that we’ve done there. We’re a bit opaque on exactly what we’re doing at the back end. But there’s a lot of research that’s gone into that – fundamentally, you’re entirely reliant on the quality of the data you have. So there’s an awful lot of work in that, because you’re also scanning in emotions. I don’t know if you’re familiar with FACS. It’s 30 or 40 years old now, but it’s essentially a library of all the possible facial expressions that a human can make. So some of the challenge, when you’re scanning people, is that they have to have enough facial control. It’s why we often use actors, to be able to show, what does disgust look like? How does that manifest on the face? So maybe there’s 40 to 70 different facial expressions or something like that. Once I’ve created a face, it’s going to then have to move, and all of that has to be worked out and calculated based on the face that I’ve created. There’s a lot going on to pull that together.

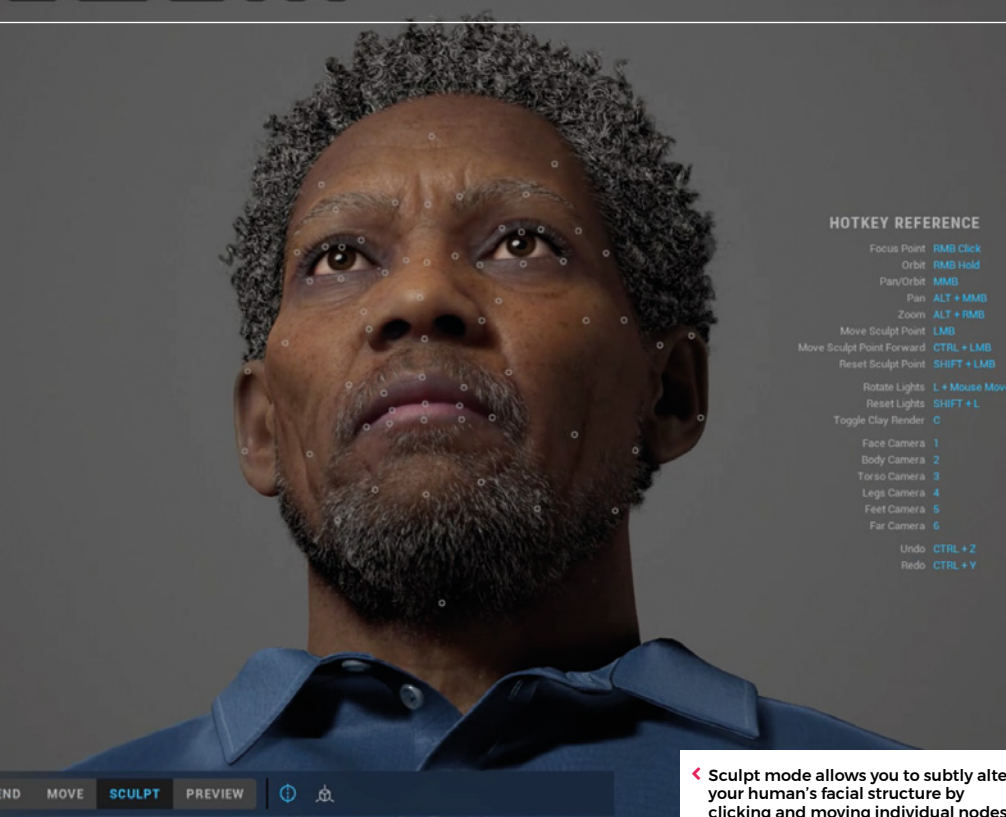
The level of detail in these characters is incredible, both in the faces and in the textures. Something as simple as the fabric: you can zoom right in and see the weave and weft on a shirt. What kind of technological wizardry’s going on there?

**PD:** We’ve done the work to generate maybe seven or eight LODs [levels of detail]



▲ “At the moment there’s, I think, 16 body types, but the bodies don’t have the same parametric control that you have over the face,” Doyle says. “That’s something we’ll get to down the line.”





◀ Sculpt mode allows you to subtly alter your human's facial structure by clicking and moving individual nodes.

## CLOUD NINE

MetaHuman is cloud-based, which means just about anyone with a computer can run it. But Epic's decision to make the app cloud-based wasn't to do with accessibility: rather, it was to avoid forcing end users to download vast quantities of data. "The issue for us was that the sheer amount of data that sits at the back end would be bad for people," Doyle explains. "You'd have to download hundreds of gigabytes to be able to use the tool. That would be a blocker... when you're using 4K, 8K textures, they take up a lot of space."

▼ MetaHuman Creator's multiple levels of detail mean that its textures look strikingly realistic, even close-up.

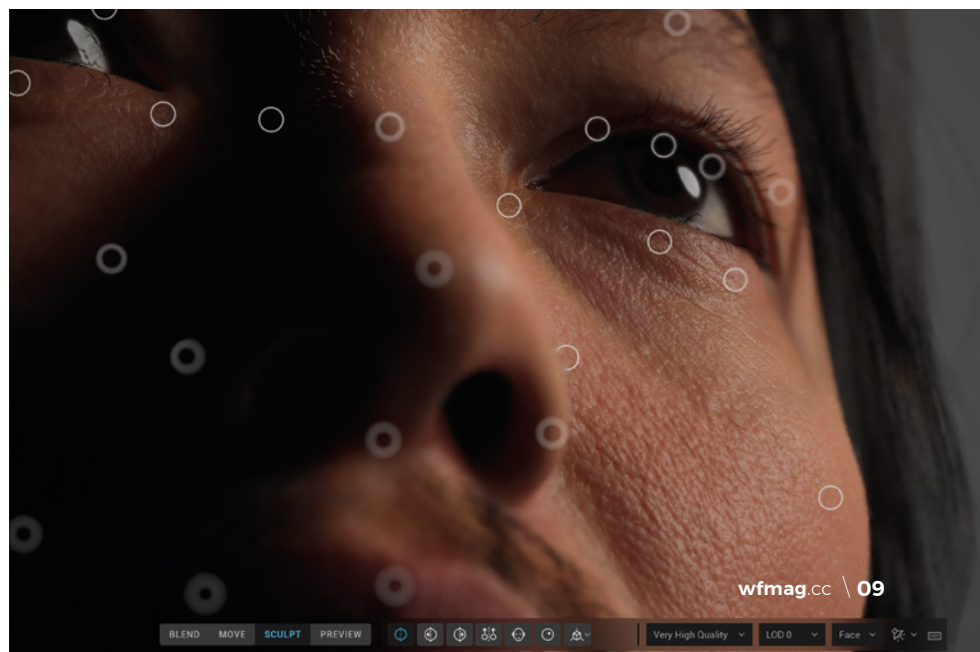
automatically. So once you've created your digital human, there's a bunch of back-end processing to then generate those eight LODs. Because we wanted to be game-ready, and animation-ready from the outset. That was just brute force work, to be honest.

In Unreal Engine 5, there's a technology called Nanite, and the whole notion there is to say, 'It shouldn't be the artist's problem to manage LOD generation'. You should be able to pull in the most complex level of asset you've created, and then it should be automatically adjusted according to platform and distance and all of those things. Our view is that's where engine technology is heading now. The monotonous, repetitive work of asset creation is the thing that needs to go away. If we're really going to make 3D technology available to everyone, we have to remove those kinds of barriers.

Once you've created a MetaHuman, you can download it, and you have a rigged character that's ready to animate. For indie studios, that would once have required a whole pipeline of different areas of expertise, right?

**PD:** Yeah. For 99 percent of people who'd like to create real-time content or short films, or anything, it's out of their reach unless you're buying stock [3D assets]. And the problem when you do that is

everyone goes, 'Well, that just looks like a store asset'. And so I think the ability to have self-expression in the characters you're creating, and then to have them immediately there and available for performance... we've seen some really great short films that people have been making this year. It's just cool when you see what people do with it, especially when you see talented people like lighting artists – even if you have someone who's talented in a particular discipline, they're not able to do everything, but now they have characters that will actually work well in those settings. Some of the work's just awesome. ➔



There's an increasing crossover in the game and film industry – *The Mandalorian* uses Unreal for its virtual sets, for instance. Do you see more convergence happening in the future?

**PD:** We're definitely seeing that. There's a thing called *The Innovator's Dilemma*, which is described by Clayton Christensen. It's this idea that when new technology appears, it's on a much steeper trajectory, so while it might not yet deliver the value if you're an incumbent, you can see this line moving up over time, much more steeply, of what's possible. We've seen game engines go from fairly janky animated content to final shots being done in-camera. So I think, over the next five years, more and more of that will happen. I'm not saying the traditional methods are gone; it's that more and more things don't need that kind of process-heavy, time-consuming methodology. And I think because virtual production

is potentially more cost-effective, there's a point where you say, 'If I'm shooting everything this way, more and more of the pipeline would just be geared around real-time engine approaches'.

There's a company called disguise who we work with to build virtual stages. I think they have 300 virtual stages globally now, and they're building 15 to 20 of them per month. It's everywhere, particularly when you're doing things like live TV or broadcast – it's so much more cost-effective. You can do big, interesting set changes. You don't notice it, but that's what's happening in things like sports broadcasting, news, election nights – often they use big virtual production stages. None of it's actually being built anymore. It's all virtual.



In video games, we'll see a lot more [digital humans] appearing. And as we introduce better tools for authoring, and getting to closer likenesses that will reflect [an artist's] concept, then we'll start seeing them as primary characters. I think where it gets interesting, as well, is in livestreaming and virtual influencers. There are many

## “Everyone’s talking about the metaverse now”

How does MetaHuman fit into that? Could virtual characters also be rendered in real time?

**PD:** I think the nature of media itself is shifting so much. The problem you have with VFX is obviously there's a deep commitment to storytelling driven by character. And so you can see scenarios where MetaHuman is being used for secondary and tertiary characters – we're seeing that with shows being made this year, where they're there, but not as primary characters. I think where they'll use digital humans is they'll go to, say, 3Lateral and say, 'I want to do a 4D scan of this person and then recreate that character'.

cases where digital humans [are being used] within a game engine and in an interactive context. We're just seeing them blow up everywhere this year. So we're right in the middle of a zeitgeist that maybe we triggered. It's quite funny: if we'd tried to launch MetaHuman as a product now [in December 2021] versus in April [2021] when we did, we'd have drowned in noise from Facebook, which is now called Meta. Everyone's talking about the metaverse now. Yet it was greenfields at the beginning of the year when launched!

What's the future for MetaHuman, in terms of the next few months to a year?

**PD:** [In 2022], we're going to start expanding the database. So there'll be more possibilities in what you can create – more base shapes you can work from. And we're going to tweak what we call DMT – the Direct Manipulation Tool. We're trying a few different things, so there's a bit more fine control available should you want it. Then we're interested in pushing performance capture. We have the Live Link [Face] iPhone app that you can hook up in Unreal Engine for performance capture, but it's still a bit too much of a sock puppet, so we bought a company called Cubic Motion,

## LATERAL THINKING

The road to what would become MetaHuman Creator began when Epic Games acquired a firm called 3Lateral in 2019. By that point, the Serbia-based studio had already developed the digital human tech behind MetaHuman, and had previously collaborated with Epic on the likes of *A Boy and His Kite*, an animated short film, and the performance capture for *Ninja Theory's Hellblade: Senua's Sacrifice*. With 3Lateral formally under the Epic banner, the next step was to integrate its tech into Unreal Engine, and also to make it more approachable for the end user. "The simplicity of the user interface was very much an evolution for 3Lateral," Doyle says. "We're going from their in-house, expert users to saying, 'How do we make this viable for anyone?'... It took a while to weave it all together."



▲ Epic Games' senior director of product marketing and business strategy, Paul Doyle.



Released in December 2021, *The Matrix Awakens* used Unreal Engine 5 and some 35,000 MetaHuman citizens to bring its city to life.

based in Manchester, which specialises in performance capture. We're still in the exploratory phase. Again, it's that same, 'How can we make it usable and accessible to many different people?'

Then beyond [2022], we want to get towards being able to create a specific digital human. A lot of [the feedback we get] is, 'Can I do stylised digital humans?', where they don't have to be anatomically plausible, but say, *GTA*-style characters, or goblins, or elves. So we're exploring there.

Clothing is a really obvious area. There are great tools like CLO, which is a marvellous design program – you can create amazing clothing from patterns using that. But as soon as you get them in a game engine, everything starts looking like it's made from stiff leather. It's not the MetaHuman team's direct responsibility, but we have a lot of expertise there about how we might solve that.

**Where do you stand on the debate over the uncanny valley? Do you think that's a chasm that can be bridged?**

**PD:** I don't know. It's hard. Humans are highly evolved detection machines, and there are interesting theories about whether that's to detect disease or ill intent. But that uncanny valley feeling gets triggered when something is even slightly off. And so one of the challenges you have is, as fidelity increases, if it's not uniform,

wherever the shortfall is actually makes the uncanny valley feel more pronounced. You go, 'That hair's not right!', and then it's gone again. And then when you get into animation, it's the same thing: it could be small things like the correct dilation of the pupils based on distance – you won't be conscious that it's not correct, but it will bother you on some level. That's before you get into micro-movement of the eye and how many hundred times per second it's vibrating... there's so much.

So I think we'll get good approximations, and often they'll be believable. But I don't know if it's a bit of a windmill that people like to tilt at, where it doesn't matter that much beyond a certain point. I think unless you're outright trying to fool someone, then there's a point where you go, 'It's a storytelling device, and it's good enough that I don't lose the audience's suspension of disbelief'.

Experts are pragmatic about this as well. They're saying, 'Can you do a perfect physics simulation?' Well, you can't, because the only way you could do that is by making a perfect re-creation of reality down to a molecular level. And it's the same for the face. So we're getting closer and closer. I think with some of the work companies are doing now around machine learning-driven simulation, we're getting better and better outcomes. What's more interesting is getting something 'good enough' available to as many people as possible. If you really want

to build a metaverse populated by people representing themselves however they want in an immersive, reactive, interesting place, then you need technology like this. So it depends on how you buy into that.

What I find fascinating is watching people express themselves with MetaHuman. We monitor traffic, obviously, of where MetaHuman is used. Twice this year, Brazil had these massive spikes in usage. We had no clue why. And then we discovered that someone on TikTok did, a 'Hey, I've created my perfect partner in MetaHuman'. And then millions of other people in Brazil did the same thing. It wasn't driven by us.

I think that's the funny thing: you could never force something like that to happen. It's a consequence of building an accessible tool. There's this fascination and delight in creating ourselves or other selves, other people. Just that playfulness. 🗨️

**You can sign up for MetaHuman Creator's Early Access at [wfmag.cc/meta-apply](https://wfmag.cc/meta-apply)**

# WAY OF THE DIGITAL SAMURAI

Dimension Studio tell us about *AKUMA*, the short film behind this month's cover

**T**hat samurai warrior staring out from this month's Wireframe cover? It was made with a combination of MetaHuman Creator and Unreal Engine 5, but it isn't a video game: rather, it's *AKUMA*, a forthcoming short film from Dimension Studio. The London-based firm has long mixed traditional filmmaking techniques with game engines to create a variety of content, from VR experiences to short films, and *AKUMA* – an atmospheric, ten-minute story about a “samurai meeting his demon” – is the latest showcase for its talents.

With its feudal Japanese setting and elaborate costumes, *AKUMA* is the kind of film that would've required an impractically huge budget had it been shot with real actors and sets; but using performance capture and digital filmmaking meant that director Rob McLellan could realise his film for a relatively modest cost.

“The release of Epic's MetaHuman is the primary reason *AKUMA* exists,” McLellan tells us. “Essentially, a character creation process that would normally take months

now took mere hours, and because of that, we decided to go into production on *AKUMA*.”

McLellan and his team did “extensive” research into the Meiji period in which *AKUMA* is set, which meant looking closely at builds, armour, and weaponry, while translator and historian Guy Hayakawa (who also performs in the film) was on hand to ensure the script was written in period-accurate Japanese.

Not that everything in *AKUMA* had to be built from scratch: McLellan estimates that “around 90 percent” of the costumes and props used in the film were found on UE Marketplace. “It ties into the overall mantra of the project,” he says, “which is to see how good a result we could achieve using what assets are available out there... for our production, using premade store assets saved us months on production time.”

The convergence between the games industry and TV and film has been going on for a while now. *Star Wars* TV spin-off *The Mandalorian*, for example, uses LED projection screens and Unreal Engine to create its alien planets on a budget.



^ *AKUMA* is set “just before the Meiji Restoration in the late 1800s,” according to Rob McLellan.





For Dimension Studio's co-founder Simon Windsor, this convergence will only continue in years to come – the welcome side-effect being that this same technology will become more cheaply available to independent film- and game-makers. "It's a really exciting time for content creators," says Windsor,

"because Unreal Engine – and Unity as well – they've reached a tipping point where they're

no longer just a game development engine; they're now content creation engines. We're focused on entertainment, but these engines are being used for architectural visualisation, or for simulation training – which again takes it away from the traditional game worlds those engines were originally designed for."

"One of the main aspects that hold a lot of creatives back is lack of resources," McLellan says. "If you're a young filmmaker who wants to make an animated film with several characters, but you aren't a character modeller and don't have the budget or contacts to get a character modeller,

then you can find yourself a bit stuck. With MetaHuman, storytellers are no longer held back by their lack of resources."

Luca Dalco, director of the forthcoming interactive drama *Martha Is Dead*, concurs that MetaHuman and similar resources could be "revolutionary" for indie game developers.

"Characters will no longer be so painstakingly difficult for small studios to create,

and as a result, they'll be more free to conceive new ideas," he says. "Much will be improved with the evolution of the tool."

Both Windsor and Dalco agree that MetaHuman is still in its early stages: Windsor points out that, at present, there isn't a straightforward way of recreating the specific likeness of, say, a real-life actor.

"In my personal opinion, there's still a lot of work to be done," Dalco continues. "[I'd like to see] more possibilities to customise characters, both within MetaHuman and also in external modelling software. I also hope that the automation for facial animation will improve to the point of

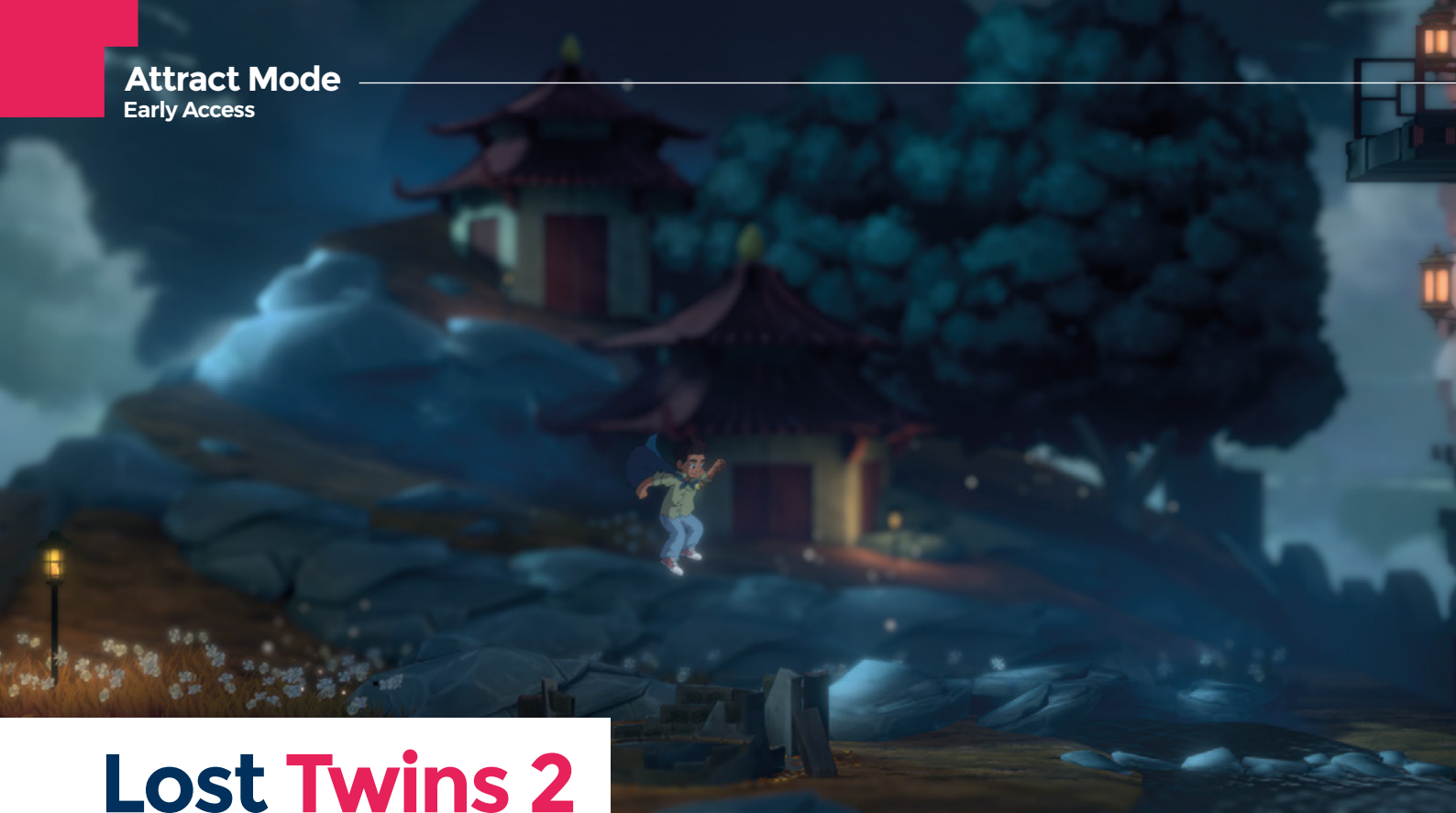
## NEW FACES

While MetaHuman made the creation of *AKUMA*'s characters comparatively straightforward, perfecting their facial animations remained a challenge, McLellan tells us. "As we progressed on the film and scenes started to take shape, it became evident that our initial capture just wasn't cutting it in terms of quality and realism. The mocap was perfect, but the facial animation needed a lot of refinement and polish. We were able to do all of that in Unreal, which meant I could work live alongside my animators to continually refine it as we moved forward with the production."

needing only a few tweaks and some finesse by the animator... If this happens, we'll enter a new generation of [cinematic] video games, even in the indie sector."

"I like to think in some ways it's helping level the playing field for talented people to tell their stories and not be held back by a lack of artists or budget," McLellan agrees. "A simple setup and a bit of passion means you can now make high-quality productions from the comfort of your home PC." <sup>W</sup>

**AKUMA is scheduled for release in Q1 2022.**



# Lost Twins 2

From Pakistan comes a puzzle-platformer inspired by the work of animator Hayao Miyazaki

## Info

**GENRE**  
Puzzle-platformer

**FORMAT**  
PC / macOS

**DEVELOPER**  
Playdew

**PUBLISHER**  
Playdew

**RELEASE**  
2022

**SOCIAL**  
@playd3w

The fame of Japanese animation house Studio Ghibli has only continued to grow since it won an Oscar for Best Animated Feature with 2001's *Spirited Away*, and game developers have increasingly drawn inspiration from its output in that time, too. Case in point: *Lost Twins 2*, a platform-puzzler with a look and feel we can only describe as 'Ghibli-esque'. About two youngsters traversing a gentle yet vibrant fantasy world, it mixes 2D animated characters with 3D backgrounds, creating a world that feels not unlike *Ni no Kuni* – a series of games which, of course, began as a collaboration between Level 7 and Studio Ghibli.

Where the *Ni no Kuni* games were typically sprawling RPG epics, however, *Lost Twins 2* is altogether more intimate. Its levels are small puzzle boxes which have to be carefully manipulated so you can move your twin

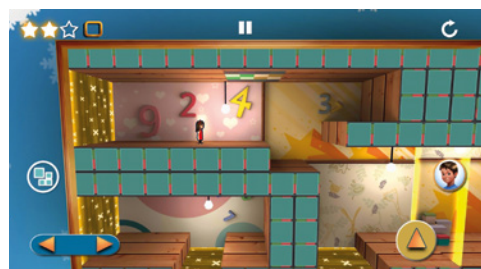
protagonists from place to place, interact with objects, and ultimately reunite them at an exit which leads to the next area.

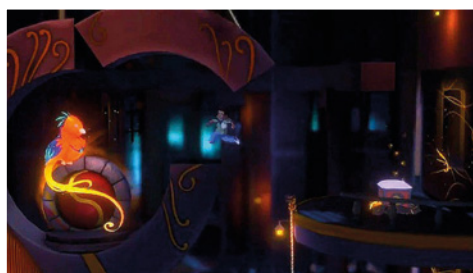
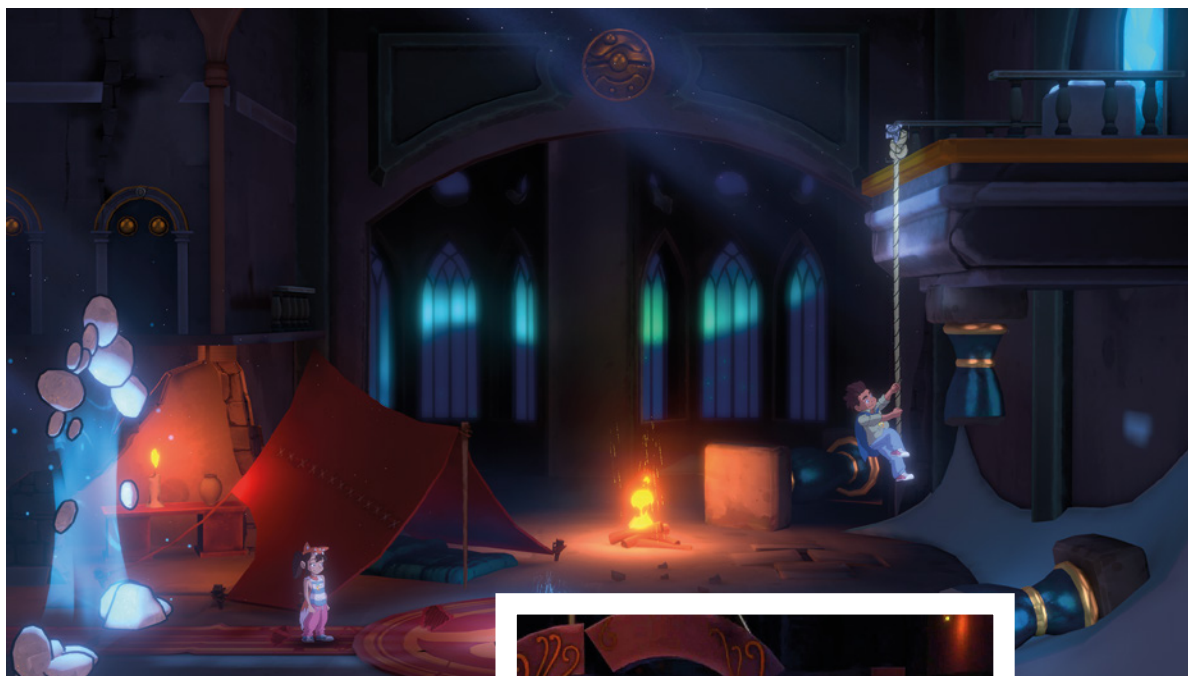
It's not unlike the mechanic presented in Sunhead Games' top-down adventure *Carto*, where chunks of the world map could be picked up and moved around, like a sliding puzzle; here, though, the mechanic is applied to a side-scrolling platformer, where you switch between controlling your two characters and shifting chunks of level around to open up new platforms and pathways for them to jump across.

Obviously, *Lost Twins 2* is a sequel (see box on opposite page for more information about the original), but its move from mobile to computers and consoles has allowed developer Playdew to push both the platforming and puzzles further than before. "The basic mechanics of the game are still the same," the studio explains via email, "but since puzzle-platformers are much easier to play on a PC or Mac, we added a bit of arcade-style platforming – timing jumps and interactions that weren't present in the previous version. For the puzzles, we have a larger space, so we increased the play area in each tile of the environment. While the whole level is a big puzzle, the single tile can have mini-puzzles to solve, which is an addition to the fun of the gameplay. We have introduced newer puzzle elements in the game."

^ We thought of WayForward's sumptuous *A Boy And His Blob* Wii remake when we first saw *Lost Twins 2*; Playdew confirms that 2D puzzler was indeed one of its inspirations.

> For reference, here's the original *Lost Twins*, released for Android and iOS. The concept's similar, but the visuals are much improved in the sequel.





To underline the anime feel, *Lost Twins 2*'s characters and objects are entirely drawn and animated by hand; the polygonal environments, meanwhile, give the fantasy world a sense of depth – though there's more to the mix of 2D and 3D than just aesthetics, as the studio explains. "The characters are in 2D, painted like Studio Ghibli movies, but for the environments, we choose to go for 3D. That helps us keep the environments separate enough from the puzzle elements and the characters, so there's a clear distinction between the interactable objects and the environment."

Ensuring that the 2D and 3D elements combined to create a coherent-looking world proved to be one of the game's major hurdles, however – particularly as the levels need to be legible in two states: both zoomed in, where you're controlling the characters, and zoomed out, where

you're manipulating the configuration of the map itself. The studio tells us: "The biggest challenge [was] coming up with

an art style that would suit both the zoomed in and zoomed out view without looking awkward, creating a clutter or confusion for the gameplay while maintaining the mood of the game that we want. Hand-painted stuff – sketches or paintings – hardly ever looks the same [from image to image], which isn't the case with 3D. Three-dimensional art intrinsically always looks consistent, and that was the main challenge:

**"The characters are in 2D, painted like Studio Ghibli movies"**

▲ The fantastical bird was like "a funny-looking sparrow" before it became the more majestic, phoenix-like creature we see now, according to PlaydeW.

making non-repetitive environments and giving them each individuality in terms of visual design. We used a lot of baked lighting and small modular environment kits to break up the monotony. We also tried to work on setting up the ambience in our scenes using effects and fog."

Like many of Studio Ghibli's films, there's an air of dreamlike mystery to *Lost Twins 2*: take the ethereal bird seen hovering in each level, for example, which is one of the major

non-player characters in the game. Based on the fenghuang bird of Chinese mythology – a creature not unlike a phoenix – it serves as a guide of sorts, since it awaits the twins at each exit they make their way towards. A character the studio spent a great deal of time and effort designing, it's also one of the game's most enigmatic: "There's more to its story," the team says. "We don't know if the bird is guiding the twins to help them... or does it have another plan altogether? That's something you'll probably figure out from playing the game." 🗨

## MEGA TWINS

The company behind the *Lost Twins* games has come a long way since its founding in 2010. Back then, there was weRPlay – a firm created to provide QA, art, and similar development services to other game studios. Gradually, though, weRPlay tentatively moved into making its own games, among them the endless runner *Run Sheeda Run*, 2D shooter *Explottens*, and of course, the original *Lost Twins*. Encouraged by the success of its initial run of games, PlaydeW was established as a sister company in 2021. "We finally decided that the team was capable of making good games and should be operating separately from the services company," the studio explains. "*Lost Twins 2* is being developed by the same team that worked on the previous title – there's been a change/addition of a few members, but essentially the core team is the same, just under a different name."



# Toys VR us

Powering through the puzzles in toy-based Tin Hearts

## Info

**GENRE**

Puzzle

**FORMAT**

PC / PS5 / XB S/X /  
PS4 / XBO / Switch  
/ Oculus

**DEVELOPER**

Rogue Sun

**PUBLISHER**

Wired Productions

**RELEASE**

Spring 2022

**SOCIAL**

@RogueSunGames

There aren't enough toy-based games. There are loads, of course, but it always feels like there aren't enough – after all, what's a better setting for video games than to bring to life the toys of our childhoods? Nothing is better. Probably. Anyway, *Tin Hearts* sees you guiding a troop of tiny (tinny) soldiers through levels riddled with puzzles in a modern-day *Lemmings* by way of *Toy Story*. But likely with not as much taking pleasure in the death of our wee charges.

"Back in 2016 when Rogue Sun was forming," explains Kostas Zarifis, the studio's creative director, "as one of various micro studios to

spring to life out of the ashes of Lionhead, one of the items on the agenda was, of course, what our first game should be. Whatever we did, there were certain criteria we wanted it to fulfil. We wanted it to be unique and really push the medium of gaming in some form. And even though we're only a small team, we wanted to try to have strong production values. Because we were a small team, though, and because we wouldn't be operating in an environment that had the resources of Microsoft to support it, we also wanted to do something relatively small in scope."

VR was landed on as the optimal format – *Tin Hearts* is set for release on Oculus and PSVR, along with non-VR formats – and plenty of design decisions were taken based on the immersive headset format. No locomotion means no motion sickness. 'Bringing the world to the player', like in *Job Simulator* or *Beat Saber*, would aid in immersion. Bringing in an idea prompted by one of Valve's VR-promoting programs – the player towering over little characters in the game, basically – tied it all together, and with all of this combined, the studio had the core mechanic of what would become *Tin Hearts*.

"As we developed that and also started adding the theme of toys and toy-making, a narrative also started to emerge," Zarifis says. "I guess it's testament to our love for telling stories that the narrative component soon became just as fully fleshed out as our ideas for what the mechanics should be, and soon enough, these two



▲ There's a warmth that oozes out of scenes like this.





- ◀ You might not expect an involved story in a puzzle game like this, but it is promised.
- ✔ The setting is decidedly British, and resolutely Victorian-ish – perfect for a bunch of toy soldiers.



components started working together to form the complete package that is *Tin Hearts* today."

Making a puzzle game is, fittingly, a puzzle in itself. Managing the balance between challenge and accessibility is a delicate tightrope to walk – being sure players know what's expected of them, but also that they're still pushed to think in order to get through what's in front of them is *difficult*. "I think most of us can recognise this mastery when we see it in puzzle games that we've played, loved, and will never forget," Zarifis says. "To replicate that is an intense challenge. Of course, it's the sort of challenge that gets me out of bed with a big smile on my face every morning, and the same is true for my team. I suppose whether we've done it right, only our players will tell. The game was in Early Access for a brief period of time, and at least judging by that experience, people did seem to like what we were doing, which was extremely encouraging."

**“Even though we’re a small team, we wanted strong production values”**

But it's not just the puzzles – and the visuals – doing the heavy lifting in *Tin Hearts*: as Zarifis pointed out, there's also its story, described as 'a powerful tale of love and compromise'. "I think gameplay drives the immersion and engagement with an experience and, therefore, it's of paramount importance," Zarifis says. "That said, a memorable, impactful story is often what stays with us after the experience and what gets us wanting to talk to others about the game. I think for us, it's not that much of a choice as storytelling

is sort of in our DNA, and like I said, we didn't necessarily set out to tell a deep, heartfelt, and at some levels personal story, but somehow, one such story made it in there."

That DNA is, of course, from the Lionhead days – so how much does the studio behind *Fable* factor into what Rogue Sun is making today?

"Lionhead was a place that attracted a very special kind of developer," Zarifis says. "It was a place full of very bright and talented people who took huge pride in their

work – and frankly, a place where my impostor syndrome was through the roof every day. I like to think Rogue Sun carries that spirit and that this shows in the work we do on *Tin Hearts* and other, less public projects."

While there are thoughts percolating away behind the scenes – both of potential future titles and upgrades for *Tin Hearts* – Zarifis is focused for now on the immediate future.

"*Tin Hearts* will be our first release as a new studio," he says. "It's been quite a few years in the making and a true labour of love by a small number of passionate people. So we really hope it will resonate. Right now, as we push through the final months of production, that's all I can think of, to be honest!" 🗨

**LESSONS LEARNED**

"I think as a new developer, we made the classic mistake of throwing all our efforts into development, and very little towards marketing and shouting about our game to the world," Zarifis admits. "Thus, we ended up with a game that had extremely positive Steam reviews across the board, but just too few of them. We had to shift to other projects for a while to keep the lights on, whilst also supporting those Early Access players with feature requests and bug fixes, and about a year later we struck a conversation with Wired, who I suppose saw the positive reception and the mutual opportunity to fully realise the game."

Attract Mode  
Early Access



# Beyond Sunset

Going back to the future in this retro action-RPG

## Info

**GENRE**  
First-person action / RPG

**FORMAT**  
PC / Mac

**DEVELOPER**  
Metacorp

**PUBLISHER**  
Metacorp

**RELEASE**  
Summer 2023

**SOCIAL**  
@sunset\_city\_rpg

# W

e're not bored of them yet, so as long as folks keep making retro throwback FPS games, we'll be playing them. And *Beyond Sunset* is quite the sight to behold – a

mix of classic first-person shooting alongside some RPG elements peppered throughout; it's a neon-drenched world of chaos by way of *DOOM* and *Duke Nukem 3D*, all stemming from creator Patrick Pineda's fondness for tabletop role-playing games. Oh, and synthwave. "In 2015, I was hosting a campaign for some friends," Pineda explains. "The campaign had been going for about a year and I was getting a bit tired of it; I wanted to try exploring something new. I knew I wanted to create something cyberpunk-y for my players."

Fast forward through a love of cyberpunk novel *Snow Crash*, forged in a long, trans-state drive to a new job; designing this new game as a coping

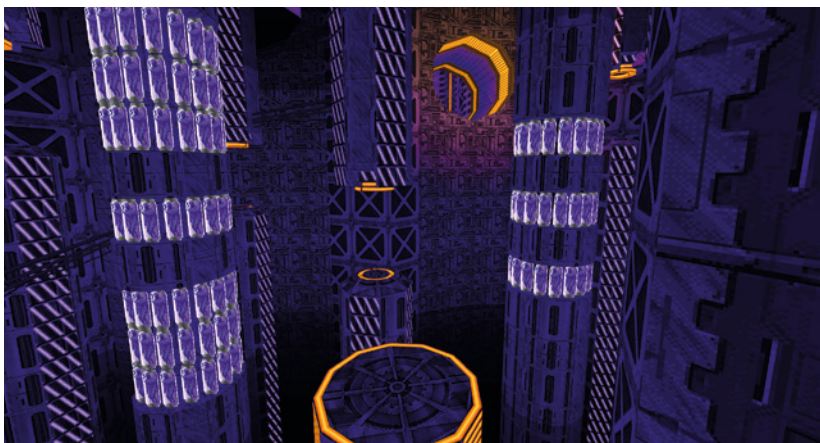
mechanism for the new job not being all it was cracked up to be; some attempts to adapt the tabletop game into an isometric RPG; and losing that job mentioned owing to the pandemic, and here we end up. *Beyond Sunset*: the synthwave and cyberpunk-inspired retro FPS with its roots firmly of the tabletop RPG variety. A curious mix.

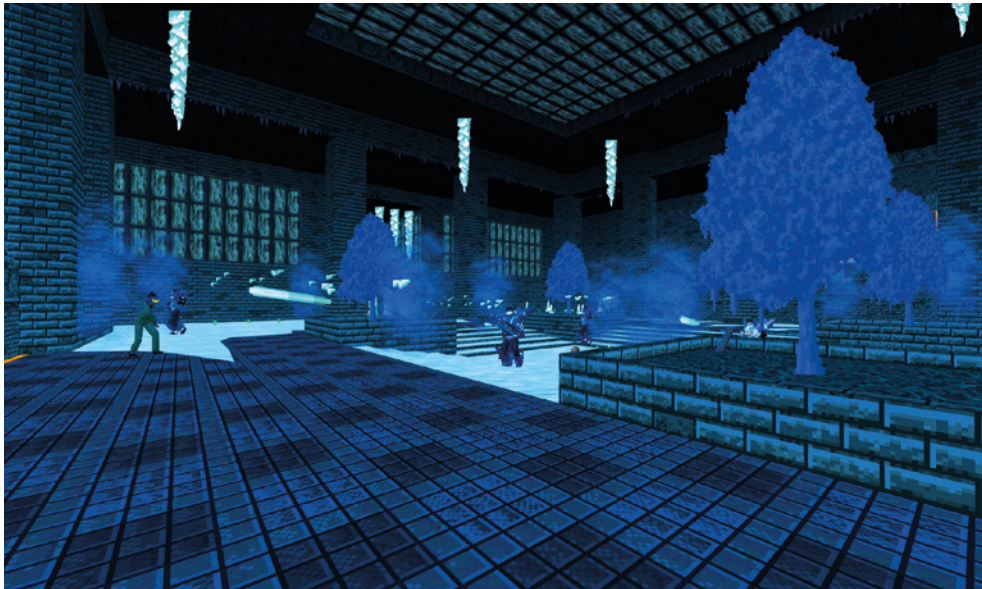
"The decision to move to a first-person shooter was largely inspired by the game *Prodeus* and the recent nineties shooter revival," Pineda says. "I knew I wanted a retro aesthetic, and I always wanted to see what a fully realised cyberpunk world would look like if it were a nineties shooter – specifically not *TekWar*, though. If I'd known about *Ion Fury* when I started working on this, I probably would've shelved the project again."

Though the project has existed in some form since around 2015, its most recent incarnation – what you see on these pages – only really began in late 2020. "It's hard to say how close [the current game is] to my original vision because of the multiple changes in format and objectives," Pineda says. "Originally it was an open-world TTRPG setting. Now it's a fairly linear first-person shooter and immersive sim. The setting hasn't changed much. The visual design hasn't changed much, either. I commissioned my close friend and total weirdo Andrew Woods to create artwork for the TTRPG. He's a phenomenally talented illustrator. His original artwork for the tabletop game became the concept art for *Beyond Sunset*. The story's adapted from two of the 'fluff text' short stories I wrote for the original book."

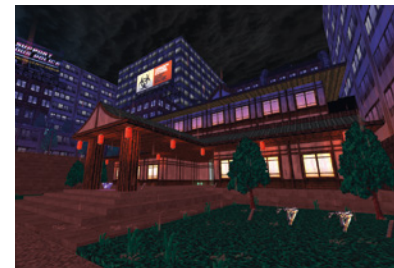
Despite all this grounding in different RPG styles, though, *Beyond Sunset* is first and foremost an action game. "The RPG elements are fairly limited," Pineda says. "If I had the kind of time

✓ The game doesn't shy away from making you do some first-person leaping, but it works better than games in the 1990s actually handled it. Looking at you, *Half-Life*.





- ◀ Of course, there's plenty of combat to be had in the game too - what would an FPS be without the S?
- ▼ That mid-to-late nineties feel oozes out of every polygon and 2D blade of grass.



and budget to make a proper RPG with a no-violence route, I would. I might revisit the idea of an isometric or top-down version of the setting again in the future. I think turn-based, top-down games are definitely better-suited for that type of gameplay. In *Sunset's* current incarnation as a retro-style FPS, I felt like it should primarily be an action game."

But that's not to say the action has been diluted at all in its journey through the RPG lens, with *Beyond Sunset* home to plenty of intense, acrobatic navigation through the gloriously future-nineties-styled levels. "I designed the movement system first, before the rest of the game," Pineda explains. "After the movement felt right, I built the levels

to accommodate the movement and make the best use of it that I could. The free-flowing movement is best used in the game's boss fights,

which are a bit of a departure from the arena combat. The bosses are inspired by bullet hell games, and a mastery of the movement mechanics is crucial. It's essential to make frequent use of the dash and slide mechanics to evade the boss attacks successfully."

Initially a solo project, *Beyond Sunset* has grown to the point where there are a few people working on bringing the game to life using a "heavily modified modern OpenGL source port of the classic Doom engine." Alongside Pineda is Mitch Whitmore, handling the console port, Roth Cardona, working on QA and level design, and Karl Vincent, who's been handling the music and who Pineda reserves special praise for:

**"I designed the movement system before the rest of the game"**

"The game would be nothing without his phenomenal score. He's an upcoming synthwave musician from Croatia. He's doing fantastic work, and I'm constantly frustrated that Twitter never seems to put my retweets of his work in people's feeds. He really deserves a huge amount of credit for the overall atmosphere of the game and for his talent as a musician."

With at least another 18 months or so before the game's release, there's plenty of time for Pineda and the team to keep picking away at and honing what *Beyond Sunset* can offer, but there are thoughts as to what could come next: "I do want to follow up *Beyond Sunset* with something," Pineda says. "There's a ton of original content in

my original source book that just won't make it into the game at all. *Beyond Sunset* is a story about a small group of characters and how their

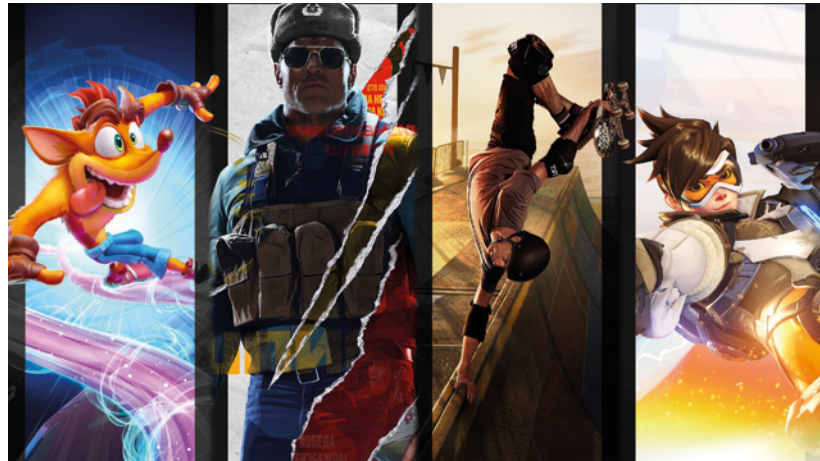
lives overlap. It's a story about the near-invisible systems we take for granted that shape our lives, and what happens when those are abused.

There's a much broader universe in the book; it's an alternate history story where the Cold War never ended and the balance of global influence shifted in favour of the Soviets. This is what has informed the retro-futurist aesthetic of the game. But there's a lot of stories in my source book, some not well-suited for a shooty action game. One unexpectedly relevant short story was about dating in the midst of a devastating pandemic. I think it would be fun to make a visual novel in the *Sunset* universe. You heard it here first: "Beyond Sunset II" is a dating sim. Probably." 🗿

## UNDER THE HOOD

The modern revival of the Doom engine has been gathering steam in recent years, and it's something Pineda is all too happy to throw out some recommendations about. "*Beyond Sunset* isn't doing anything particularly groundbreaking or limit-pushing," he says. "It's a retro FPS to the core. I can't say the same for *Selaco*, which is doing some truly impressive things with the old engine. I do think that *Beyond Sunset* is part of a larger classic Doom engine revival. It's one of many upcoming standalone Doom engine titles coming out in the next few years. Here's a rapid-fire list of other games using Doom engine source ports: *REKKR*, *Mala Petaka*, *Relentless Frontier*, *The Age of Hell*, *Darkadia*, *Hedon*, and *Supplice*. I'm sure there are others. But Doom engine games are coming back in a big way, and I'm very excited for all of them."

# That was the month that was



## 01. Ah. Right.

Well, that one certainly came out of nowhere, didn't it? Microsoft purchased the entirety of Activision Blizzard for a piddling £50.4 billion, bringing the likes of *Call of Duty*, *World of Warcraft*, and *Candy Crush* under the Xbox banner. The deal needs regulatory approval and will take some time to complete – the Bethesda purchase took six months, as a clue – but, if it is all approved, this will mean... er, things are *a bit different in video games*.

Specifics of the deal were largely under wraps at the time of writing, though a few

snippets had slipped through. Embattled CEO Bobby Kotick is to stay on at the helm, apparently until the deal is closed, when he will be given a golden parachute and sent off to enjoy his Literal Billions. No layoffs have been confirmed, as you'd expect, but – also as you'd expect – they're to be expected. That is to say, there's an expectation of expediting the employment experience of some soon-to-be ex-employees.

The big concern of gaming nerds the world over, of course, is what this all

means for ActiBlizz games (also King) on consoles and devices that aren't owned and operated by Microsoft. Well, that's more up in the air. Again, we look to the Bethesda plan, in which existing deals were followed through on – such as *Deathloop's* PS5 timed exclusivity – and other existing titles already available on competing platforms. But future ActiBlizz releases? It wouldn't be daft to expect the biggest ones to remain on single platforms – *Call of Duty* as an Xbox exclusive, basically. Not *Warzone*, given that's a nice money-maker (and because it's already on PlayStation), but maybe the yearly *COD* updates.

Speaking to Bloomberg about the deal, Phil Spencer was understandably cagey: "I'll just say to players out there who are playing Activision Blizzard games on Sony's platform: it's not our intent to pull communities away from that platform and we remained committed to that." Vague? *Yup*.

Sony's stock took a hit in the wake of the news, with £14.6bn being wiped off the company's valuation. But given that's all made-up space money that doesn't exist, it'll probably be fine. And speaking of 'fine' – how about that upcoming Game Pass line-up, eh? Isn't capitalism *wild*.



Yep, that's a *Dead Cells* arcade cab, coming from iiRcade

GameStop announces NFT/crypto marketplace launching soon; stock inevitably rises



03



02



04

## 02. Days Gone gone

The game might have sold some eight million copies, but Sony Bend Studio isn't getting to make the *Days Gone* sequel it wanted to. Taking to Twitter, the game's director Jeff Ross claimed the sales figures were higher than the eight million Sony was celebrating for *Ghost of Tsushima*, but that the local office had made the team feel like *Days Gone* was a failure despite it matching the sales of *Sucker Punch's* title. A mixed critical reception also led to a pitch for a sequel being turned down.

## 03. Ghostly

Bloomberg reported the upcoming release from Ghost Story Games, Ken Levine's studio formed in the wake of Irrational Games, has suffered significant setbacks for a long time now. With the team forming in 2014 and absolutely nothing of the promised game being shown at all, it doesn't come as much surprise to hear there's trouble behind the scenes – especially with Levine's last game, *BioShock Infinite*, needing the 'finisher' Rod Fergusson to come in and help get the project over the line. Hopefully it can be sorted out, of course.

## 04. I'm Sonycus

Time probably won't be friendly here, but: Sony is said to be planning a subscription service similar to the wonderful Xbox Game Pass, canning its separate mix of PS Plus and PS Now and turning it into one glorious whole. Along with the shift, rumours persist the new service – codenamed Spartacus – will include PSone and PS2 games for PS5, which is fantastic news for those of us who are tired of everything being a free-to-play game-as-a-service and just want to waddle through *Silent Bomber* endlessly. Though, admittedly, original hardware and emulators do already exist for that.

*S.T.A.L.K.E.R. 2*  
delayed until December



Sony gives more detail on PSVR2, says it will be "next generation" of VR gaming

06



05



## 05. LGBTabletop

*Tabletop Simulator* hit the headlines following accusations its community moderation has veered sharply anti-LGBTQ+, with the claim a user saying they were gay was against the rules. Further checks were made to see if someone saying they were straight was against the rules; it was not. This resulted in what you'd expect: review-bombing, homophobic and transphobic comments flying from idiots online, the developer posting a seemingly heartfelt apology for what it says is a misunderstanding, and the complete (temporary) shutdown of global chat in the virtual board gaming platform.

## 06. Ba-Zynga

Take-Two purchased mobile game factory Zynga for a bargain £9.3 billion, gobbling up the *FarmVille* and *Words With Friends* creator. "This strategic combination brings together our best-in-class console and PC franchises, with a market-leading, diversified mobile publishing platform that has a rich history of innovation and creativity," said Strauss Zelnick, chairman and CEO of Take-Two. "Zynga also has a highly talented and deeply experienced team, and we look forward to welcoming them into the Take-Two family in the coming months."

07



## 07. Riotous

After settling a gender discrimination lawsuit for around £73m, Riot Games made an effort to relaunch itself with a public declaration of intent that – aside from the business-speak waffle – was actually quite interesting. Not shying away from recent events, the post stated: "We're asking Rioters to commit to a Riot where everyone feels supported. Where ideas get productive feedback, where Rioters ask tough questions in ways that foster healthy dialogue, where we're all learning and growing from diverse perspectives, and where we're unapologetically and relentlessly focused on players." Proof of pudding: in tasting, and all that, but we shall see.



*Rust*: eight years old, twelve million sales, plenty of bases ransacked in the nude

**Frontier Developments lost £1.7m in the first half of fiscal year 2021. Crivens.**



08



09



10

## 08. E3 digi

The Entertainment Software Association made the decision to make E3 digital-only again this year, as a result of the ongoing uncertainty surrounding the global pandemic. A statement from the ESA read: "Due to the ongoing health risks surrounding Covid-19 and its potential impact on the safety of exhibitors and attendees, E3 will not be held in person in 2022. We remain incredibly excited about the future of E3 and look forward to announcing more details soon." It's fine; LA's rubbish anyway.

## 09. Bye-bye Xbox

Microsoft revealed it had quietly shut down production of all Xbox One S consoles at the end of 2020, following the move to end production of the Xbox One X before the launch of the current-gen Xbox machines. This means the previous generation of Xbox consoles is officially over – they'll remain on sale as long as retailers have them, but once they're gone, they're gone. Honestly, with backwards compatibility as good as it is, outside of budgetary concerns (and availability), there's little reason *not* to pick up a Series S/X.

## 10. Hello PS4

Meanwhile, Sony has actually ramped up production of the PS4, with the company expecting to produce around a million new units of the console through 2022. This has come as a result of the company's inability to have a steady output of PS5 consoles, owing to the world completely falling apart/the chip shortage. As a result, the brass has taken the decision to prolong the PS4's life by another year – it was originally intended to be summarily executed at the end of 2021 before this reprieve hit.

42 highest paid CEOs in gaming brought in £614 million between them, wahey!



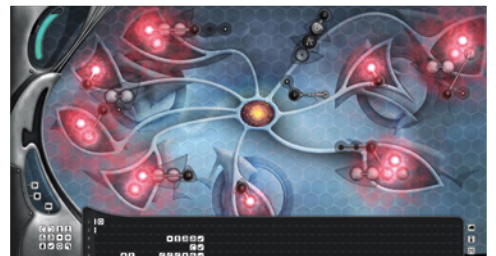
Atsushi Inaba takes over as president and CEO of PlatinumGames

# winning



## You Suck At Parking ↗

Most driving games involve hurtling around tracks at ludicrous speeds rather than grinding to a halt, but as its title implies, this is precisely what you're asked to do in *You Suck At Parking*. Viewed from a (sort of) isometric perspective, it's a fizzy little action game where you guide your boxy vehicle around twisty, bite-sized courses, before bringing it to a graceful stop in a parking space at the end. Or, equally likely, you'll miss the parking space entirely and careen sideways off a cliff. Either way, it's the kind of simple, novel action title that's likely to keep us absorbed for hours. If you like the sound of all this, there's currently a demo available to download at [wfmag.cc/parking](http://wfmag.cc/parking).



## VELONE ↗

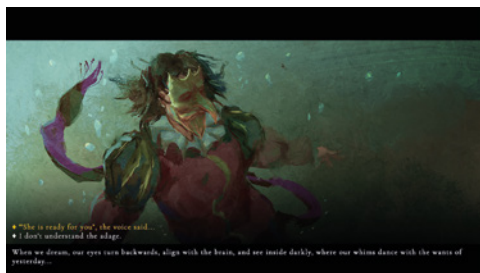
If you like puzzle games that offer a serious challenge, *VELONE* is well worth further investigation. Each stage takes place on a cellular grid of interlocking mechanisms which you have to manipulate and generally tinker with to bring back to life. Imagine opening up the back of a pocket watch and fiddling about with its cogs in the hope of making it work again. Now imagine that the pocket watch is from an alien planet, all the cogs are covered in strange symbols, and you have a growing suspicion that the watch isn't really a watch at all. In short: *VELONE* looks bewildering, but in a good way.

## Life of Delta ↖

A point-and-click adventure's success or failure really hinges on its storytelling and puzzles, but based on its visuals alone, *Life of Delta* has already captured our imagination. Set in a post-apocalyptic world where humans have largely died out, the game introduces Delta, a humble service robot on a journey across a scorched, barren landscape. Aside from the hand-painted artwork, *Life of Delta* also has a wealth of minigames to complete as well as the expected environmental puzzles – the demo (head to [wfmag.cc/deltalife](http://wfmag.cc/deltalife)) is worth having a look at, just to get an idea of what developer Airo Games has in store.





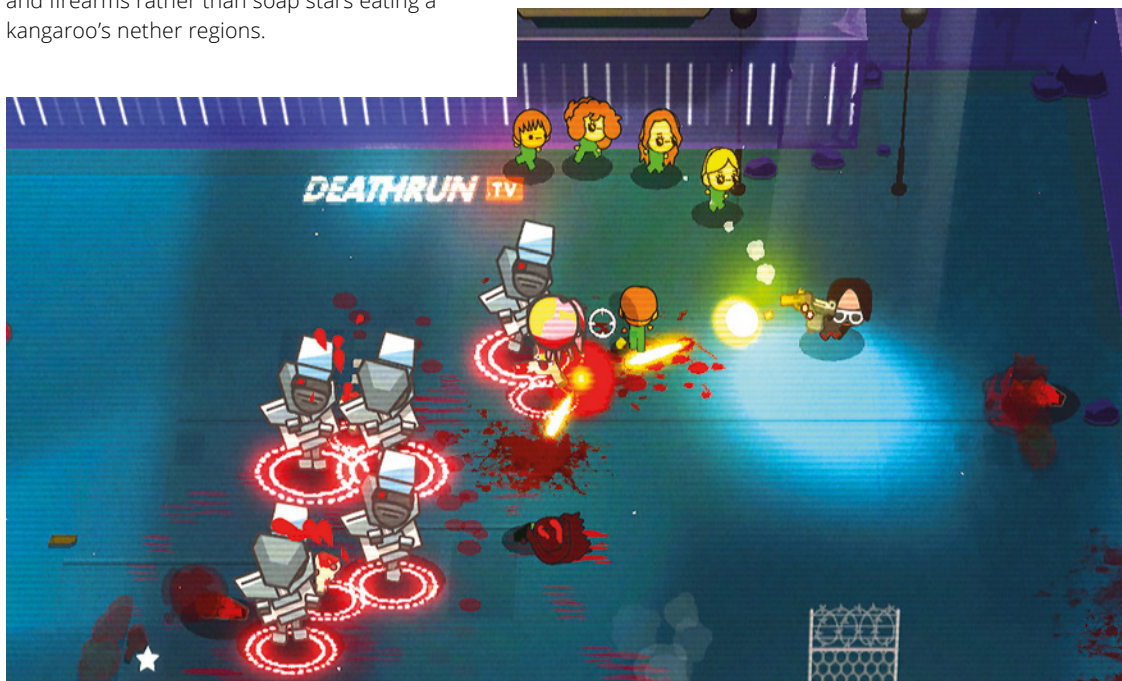


## Where Birds Go to Sleep ↗

The trailers don't give too much away, but developer Quiet Little Feet's description for its upcoming narrative adventure is a compelling one. Set on a foggy prison island, *Where Birds Go to Sleep* introduces Cormo, an "unsavoury" inmate with his mind set on escape. The twist? You don't have direct control over the protagonist. "He might not heed all your commands, and will argue with you over decisions made or about to be made," the studio writes. "Pick his brains and change his mind... or have him change yours." It sounds like a solid basis for an engrossing, unsettling piece of interactive fiction.

## DEATHRUN TV ↘

If you're old enough to remember the deliriously violent arcade game *Smash TV*, then you'll probably appreciate the similarly manic goings-on in this upcoming twinstick shooter. Like that earlier arcade opus, *DEATHRUN TV* sees you take the role of a contestant on a futuristic and very murderous game show – think of it like *I'm A Celebrity... Get Me Out Of Here!*, but with gore and firearms rather than soap stars eating a kangaroo's nether regions.



## Children of Silentown ↘

Here's another point-and-click adventure brought to life with some captivating visuals. Set in a village hemmed in by a monster-filled forest, it introduces Lucy, a blank-eyed young girl who's starting to grow suspicious of the strange goings-on in her remote community. *Children of Silentown* doesn't have a firm release date yet, but there's an equally gorgeous-looking prologue you can freely play now if you want a taste of things to come: [wfmag.cc/silentown](http://wfmag.cc/silentown).





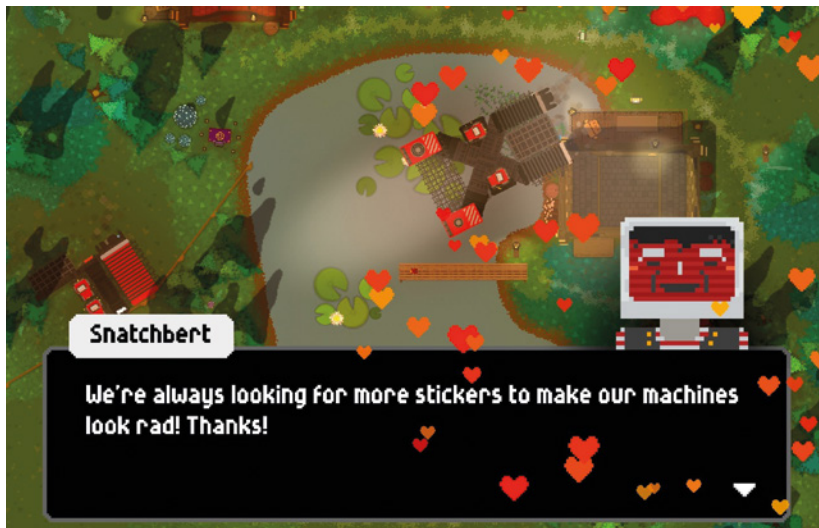
## KINGDOM of the DEAD ↗

A horror western with its mechanics drawing heavily on 1990s-era first-person shooters like *Quake*, *KINGDOM of the DEAD* reaches even further back for its visual style. Every inch of the game is rendered in a distinctive black-and-white style that recalls old engravings or wood-block prints; the only splashes of colour come from the odd lick of flame, glowing item, or splash of blood from a gunned-down enemy. PlatinumGames came up with a similar cel-shading trick with *MadWorld* years ago, but its usage here is far more Gothic: there are armies of zombies, boss fights, and, as lightning strikes over benighted graveyards full of drooling beasts, a strikingly oppressive atmosphere.



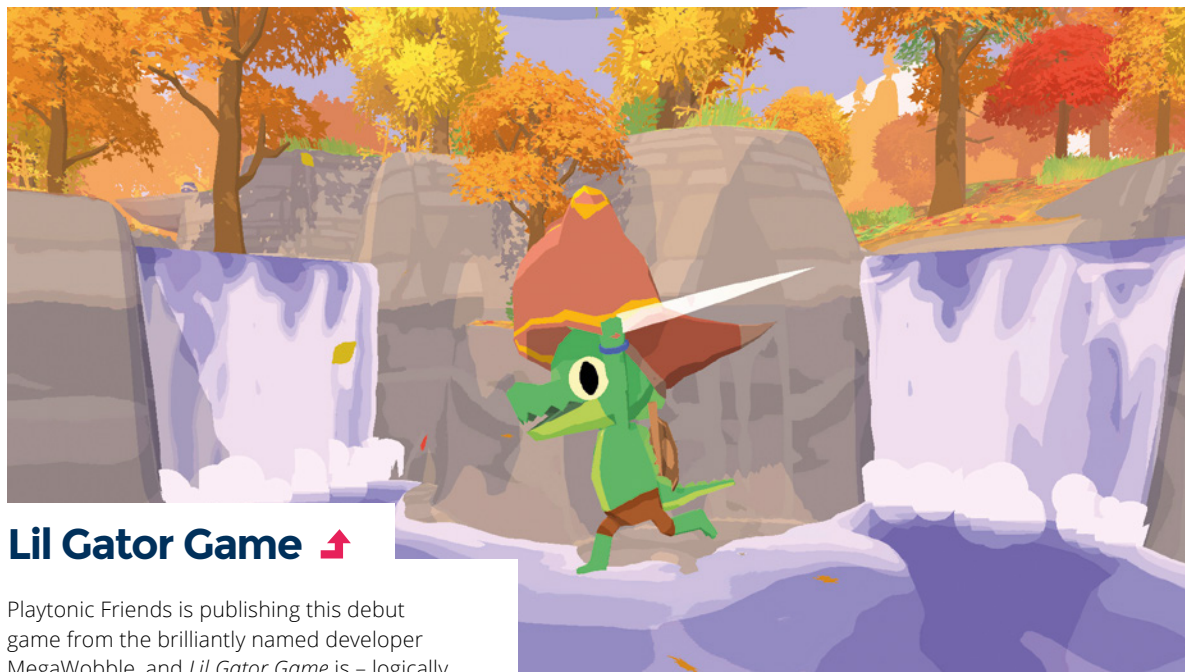
## Blossom Tales 2: The Minotaur Prince ↗

It's over four years since the release of the first *Blossom Tales* game, *The Sleeping King* – a likeably compact *Zelda*-like from indie developer Castle Pixel. This upcoming sequel promises more of the same – another breezy fantasy adventure for its heroine, Lily, to complete, with plenty of dungeons and enemies to best along the way. If you're longing for 16-bit *Zelda* adventures like *A Link To The Past*, then *The Minotaur Prince* should be just the tonic (or Blue Potion).



## FixFox ↖

Most of the foxes we've met tend to spend their waking hours rummaging through bins, but Vix is different: she loves nothing more than flying through space and fixing broken-down machines with her trusty sentient toolbox, Tin. A top-down adventure with a streak of good-natured humour, *FixFox* has plenty of variety, from what we can tell: there's exploration, driving sequences in curious vehicles (including a tank-like thing that looks like a wasp), and device-fixing minigames. There's also a surprisingly deep sci-fi plot tying it all together, taking in climate change, gene-splicing, and a "cosmic mystery that transcends existence".



## Lil Gator Game ↗

Playtonic Friends is publishing this debut game from the brilliantly named developer MegaWobble, and *Lil Gator Game* is – logically enough – about a little alligator on a whimsical adventure. There's exploration, there's crafting, and plenty of cheerful animal townsfolk to chat to. Its laid-back pleasures remind us a little of *A Short Hike*, which is by no means a bad thing. And, in what's becoming a common theme this month, there's also a demo for this one available to download if you'd like to sample its colourful, wistful delights: [wfmag.cc/lilgator](http://wfmag.cc/lilgator).

## Definitely Not Fried Chicken ↘

If you have a strange hankering to step into the role of Gus Fring, the murderous chain restaurant proprietor from *Breaking Bad*, look no further than *Definitely Not Fried Chicken*. Like AMC's hit TV drama, the restaurants here are but a front for your real business empire: among other criminal enterprises, you can also engage in the selling and distributing of what we'll politely call 'pharmaceuticals'. *Definitely Not Fried Chicken* is, therefore, a management sim with a markedly less wholesome theme than the likes of *Planet Zoo* or *Two Point Hospital*, which its creators, Dope Games, cite as distant cousins.

## Ghostlore ↘

Hailing from Singapore, this *Diablo*-like is steeped in South-east Asian folklore. So in place of the usual fantasy denizens, expect to encounter hopping zombies, shape-shifting beasts, and female ghosts loitering in banana trees. *Ghostlore*'s due to hit Early Access in March, but a demo should be available on Steam by the time you read this – for more details, head to [wfmag.cc/bananaghost](http://wfmag.cc/bananaghost).





# FIRST CONTACT:

## DESIGNING VIDEO GAME ALIENS

Far from the mindless invaders of gaming's past, some aliens have been designed with an eye on scientific realism. We meet the minds behind them

WRITTEN BY  
CHRIS FARNELL

✓ The Rama are a plant species in *The Fermi Paradox* who travel around on domesticated crabs.



**N**

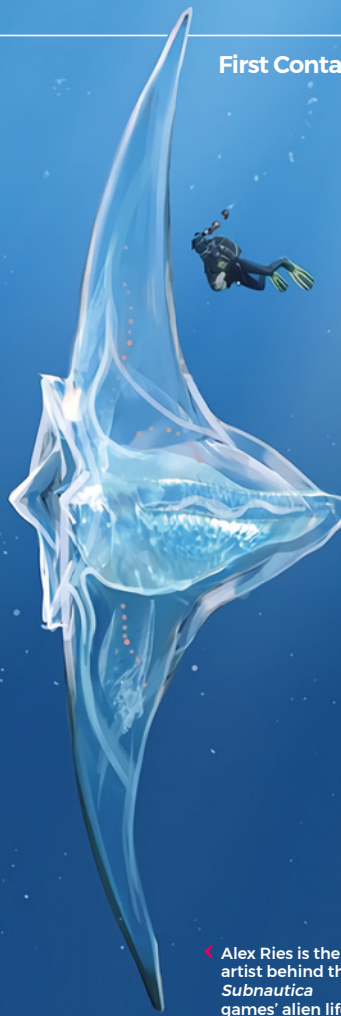
o rubber foreheads. That was one of the stipulations the designers of *The Fermi Paradox* had in place when designing its space strategy sim – an epic game about guiding civilisations through the ages, from the Neolithic era to interstellar empires. Trying to define what works, and what makes for a successful alien design is a challenge, but one thing its artists were clear on from the start is what they wanted to avoid. “We try to avoid the ‘rubber-forehead aliens’ of *Star Trek*,” says Jörg Reisig, the creative lead at *The Fermi Paradox*'s studio, Anomaly Games. “And even when we add humanoid aliens or aliens inspired by normal animals, we like to add enough spins on them

so they feel like they could have really evolved on a completely different planet.”

It makes sense. Video games aren't restricted by the same budgetary and practical constraints of TV and movie aliens, and if you're designing aliens, you might as well aim for something truly weird. But what's surprising is how often the process of creating alien life is accompanied by a degree of scientific rigour.

### THE APPLIANCE OF SCIENCE

Perhaps the poster child for this is the alien planet survival sim *Subnautica*, and its even more ambitious Arctic sequel *Subnautica: Below Zero*. The latter's creatures were designed by artist Alex Ries, also known for his artwork



✓ As well as designing each species, *The Fermi Paradox* also mapped out how they evolved.

◀ Alex Ries is the artist behind the *Subnautica* games' alien life.

## "WE WANT TO DESIGN REALISTIC CREATURES WHOSE BODIES MAKE SENSE"

covering the richly detailed "Birrin" alien world, which he's currently writing a book about. "Real science is a critical underpinning of my work," Ries explains. "Because *Subnautica* has looser rules but explores real scientific concepts, knowledge of phenomena like brinicles, how animals use bioluminescence, and the diversity of extinct sea-life are all foundational. I learned about these things through collecting texts on invertebrate biology, animal guides, and books about important evolutionary events like the Cambrian explosion."

While *The Fermi Paradox* doesn't focus on the science behind its aliens to the same degree, it still informs its designs. "We want to design realistic creatures whose bodies make sense but don't go that deep into real-life science," Reisig says. "The player has to know from the picture and a short description how the alien

works, and details are left for the imagination – or later follow-up events in the game."

The process begins with picking one or two main characteristics, such as whether the alien's an apex predator, or does it produce light in the deep sea, but the primary focus of *The Fermi Paradox* is social, not biological. "Since our civilisations develop from the stone age to futuristic eras, we can give them a bit more character when they change outfits according to the current technology level," Reisig says.

At the other end of the spectrum there's *The Eternal Cylinder*, a game where the player starts out as a lone, vulnerable bottom-feeder forced to evolve when →



✗ *The Fermi Paradox's* Maru species was originally designed with many eyes, before their designers decided to give them no eyes at all.

### "I TRY TO BE SURE THE CREATURE MAKES SENSE IN ITS SETTING"

the titular cylinder begins rolling across, and crushing, their entire habitat. The creatures in *The Eternal Cylinder* look less like they're out of a zoologist's notebook and more like something that stumbled out of a Hieronymus Bosch painting, but they are still underpinned by their own internal logic.

"We first came up with the designs and then sat down with the writer to give them a more scientific and logical standing in the alien world we created," explains Carlos Bordeu, *The Eternal Cylinder's* game director. "That was obviously a big challenge as some of the designs were pretty wild. But since our aliens were animals and not 'monsters', it was important that they felt as such and didn't do anything that felt too unbelievable. Only the more surreal or intelligent life forms in the games – those who could have developed technology – have

'powers' that would seem like they're too far-fetched for animals. But obviously, this is a very surreal title, so there are things that are done for the convenience of story and game design."

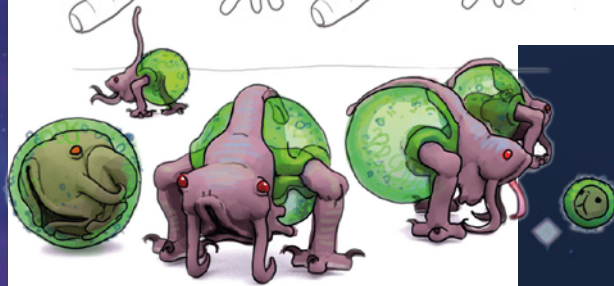
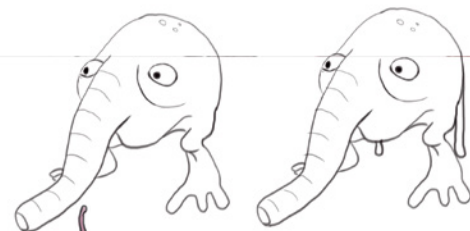
### ENVIRONMENTAL CONCERNS

One thing all these games have in common is that their alien creatures are shaped by the forces of evolution, which means their design has to take into account not just what a creature's like, but also its environment.

"Before I start designing anything, we usually first establish what kind of planet these aliens come from," says Anna Grinenko, the character artist on *The Fermi Paradox*. "Is it an ice planet, a desert planet, a garden planet? This obviously already determines certain themes, whether or not the creature will move around in water for example, if they can fly and so on."

Ries also starts from a place of considering the environment of his creatures. "First, the alien must fit the world and aesthetic sensibilities of the universe it is intended for," he says. "I always keep a few images from the current project to be sure my style is staying

♥ When designing intelligent species, the artist must also imagine what their culture and fashions are like.



true to the rest of that world. After that, I try to be sure the creature makes sense evolutionarily in its setting, showing links and hints of possible ancestry in its design."

### SPECULATIVE EVOLUTION

Not that this approach to designing alien life is exactly new. Some of the strangest alien designs you'll ever see come not from any movie or TV show, but from fictional travelogues and textbooks such as Wayne Barlowe's beautiful *Expedition*, or Dougal Dixon's nightmarish *Man After Man*.

These books form part of a tradition called 'speculative evolution', and the most recent example of it was Netflix's mock-nature documentary, *Alien Worlds*.

Professor Lewis Dartnell is an astrobiologist who specialises in the search for microbial life on Mars. He's the author of *Life in the Universe: A Beginner's Guide*, and consulted for *Alien Worlds*. Dartnell explains that speculative evolution is a hugely creative endeavour, but informed by real science. "There's obviously a huge amount of imagination and creativity that goes into it,"

### SUBNAUTICA: BELOW ZERO'S INSPIRATIONS

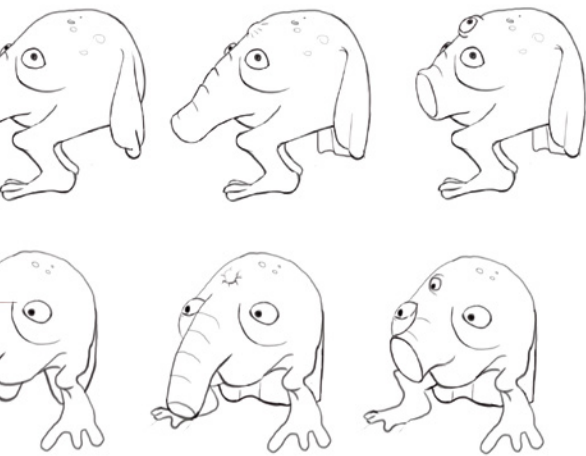
"The works of [Wayne] Barlowe are all critical, and I particularly love beings like the Arctic Sedge Slider and Groveback," says *Below Zero* artist Alex Ries. "As a child, I loved the Sarlacc in *Star Wars: Return of the Jedi* and the myriad curious creatures inhabiting that universe. Even before I read the book, the sandworms of *Dune* had me in awe. However, of equal importance are Japanese artists working in anime and manga. Shows like *Neon Genesis Evangelion*, with its mad surrealistic Angels, and the wonderful insectoid life of *Nausicaä of the Valley of the Wind*, inspire me to this day."

Dartnell says. "But in speculative evolution – and there's a huge community that does this – it's about bounded imagination and creativity, working in particular rulesets and principles. You only include things that are physically possible and make good engineering sense. So, in *Alien Worlds*, they went to great lengths to create things that looked a bit wacky but had a logical sense to them and were plausible."

It's easy to see the influence of the speculative evolution genre on *Subnautica: Below Zero*. "My work simply wouldn't exist at all without these foundational works," Ries says. "Barlowe's *Expedition*, Dixon's *Man After Man*, and Terry Whitlatch's *The Wildlife of Star Wars* showed the way forward for me.

"They demonstrated that you could take a rigorous natural history approach and apply it to alien life, rather than just creating standalone abstract creatures devoid of evolutionary context." ➔

▼ Even *The Eternal Cylinder's* more outlandish designs are inspired by things in nature.



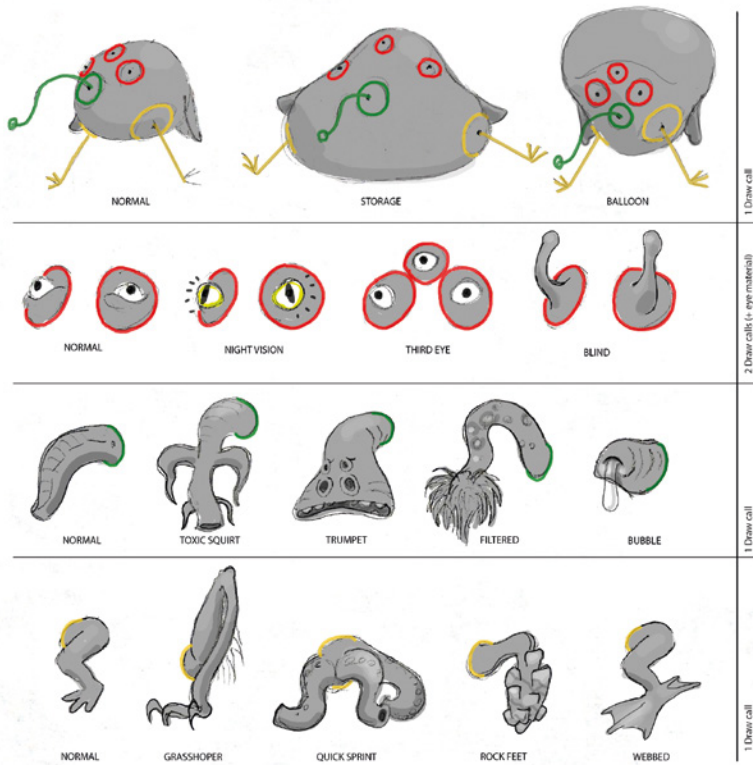
▲ A large part of *The Eternal Cylinder's* gameplay is about how creatures can evolve to fit new environments.

◀ *The Eternal Cylinder* also maps out the life cycles of some of its creatures.





▲ In *The Eternal Cylinder*, you play Trebhums – small, fragile creatures in a hostile environment.



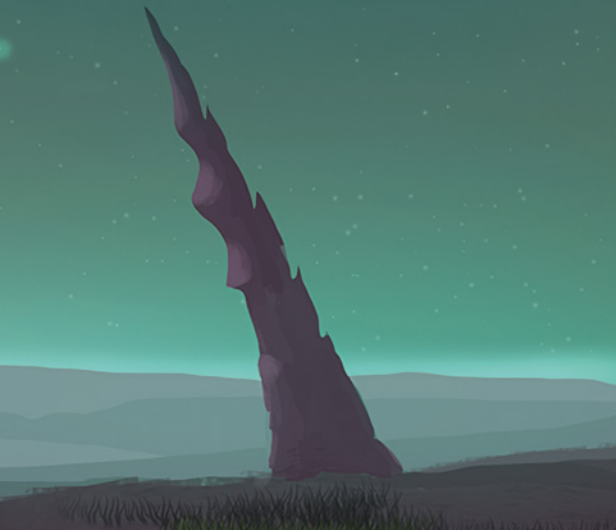
▲ As well as whole creatures, *The Eternal Cylinder* also needed many individual body parts to be designed.

### LIFE ON THE DRAWING BOARD

Of course, these aliens aren't actually the result of natural selection. They're the result of artists' and designers' hard work. The process of designing a new alien life form varies from person to person; sometimes they'll draw from real-world inspirations, or sometimes create a new shape entirely from scratch. "Sometimes the team already has ideas in mind that I can take into account during the design process, sometimes I go on a research spree to find more ideas and inspirations – it really depends on the individual creature," Grinenko says.

"On a project like *Below Zero*, I start simple, with a blank Photoshop canvas," Ries tells us. "I would sketch out forms to explore possibilities. I don't bother with shading or colour at this stage, only form. If there's a specific brief, then I work from references of real-world creatures with similar niches on Earth that the alien might inhabit. If the task is freeform I'll draw on my knowledge of ecology and zoology to put together creatures that are visually and behaviourally interesting, while remaining functional within the rules of the *Subnautica* universe."





In games, it's often crucial that players can identify a creature quickly and easily, sometimes from a distance, so 'silhouette' is a word that often comes up in conversations about alien design. "You want to focus on the silhouette a lot, make sure it stands out from other creatures in the game," Bordeu says.

"The silhouette of an alien is very important," Grinenko agrees. "I want the designs to look different from each other in the game, preferably instantly recognisable, so I didn't want to limit myself with poses, or make everybody humanoid because of that. That does bring more workload, though. It's practically impossible to recycle something from one alien to another – the more animalistic or surreal the alien, the longer I spend in the sketch phase and the more difficult the clothes, and you need to get very creative with how they adapt through their eras."

## ALIEN LOGIC

Once the shape's established, it's time to start thinking about the implications of that shape, both how it informs the alien's behaviour, and how its behaviour is informed by its environment.

"One of our community favourites – the Maru – actually started out as a many-eyed raptor," Grinenko says. "While sketching, I suddenly thought, 'Wouldn't it be wicked if they actually had no eyes at all?' Suddenly, it got really exciting to think about how they'd perceive things – is it smell, echo location, hearing? So, just with that small change, a lot of very cool concepts popped up that initially didn't even seem that interesting."

## "YOU EXPECT A LOGIC BEHIND THE DESIGN OF THE ANIMALS"

It's common for the design process to throw up ideas that are eliminated along the way. Natural selection has a similar process: if a particular creature design doesn't work, it dies and leaves no offspring. This means designers need to try and avoid design flaws that would get their creatures 'deselected'.

"You expect a logic behind the design of the animals and also obvious flaws that would have been avoided," Dartnell says.

Dartnell points to one of the more interesting designs in *Subnautica: Below Zero* – its alien penguins. "There's a nice idea here," he says. "All vertebrates on Earth have a mouth that moves up and down – this penguin has a mouth that opens side-to-side. But what wouldn't work so much is it seems

this alien penguin, as soon as it opens its mouth, it blinds itself to the thing it's trying to catch."

Of course, that's not to say evolution doesn't make mistakes either.

"There's a litany of errors in the human body," Dartnell points out. "For instance, we can choke because our swallow and breathing hole are in the same place. But you won't survive long with a critical design flaw."

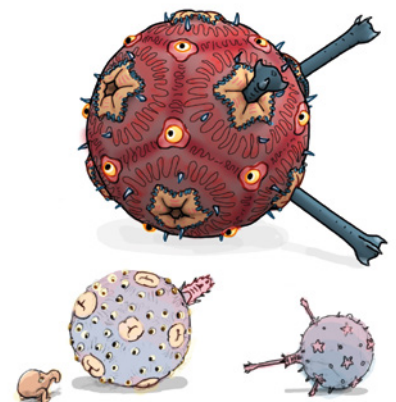
## THE GAME ENVIRONMENT

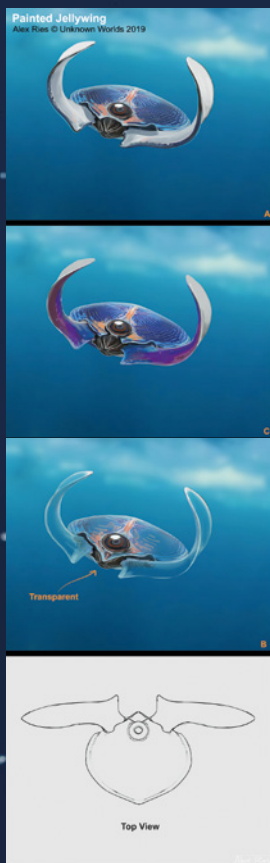
As well as being adapted to a game's fictional world, creature designs must also be adapted to the digital environment they need to navigate. "A good example is the Tonglegrop – a giant predator that is one of the larger enemies that hunts the player in [*The Eternal Cylinder*]," says Bordeu. "Since we knew the terrain of the game was going to be uneven – an issue that is usually problematic in game development – having a creature that moved by walking on top of a boulder-shaped bottom was a convenient way of making it easier to implement, since it pivots from a single spot under it rather than multiple points like a quadruped. The projectile vomit was also an easier attack to implement, as this allowed the creature to be very good at attacking foes all around it." ➔

## THE ETERNAL CYLINDER'S INSPIRATIONS

"Some creatures are clearly inspired by fictional creatures in existing literature – the plant creatures of the Ice Biome are inspired by the triffids from *The Day of the Triffids*, for example," says *The Eternal Cylinder's* Carlos Bordeu. "The Great Gaaahr is a monstrous creature that looks like a mix of a Brontosaurus and a Helicoptorion. I think *Half-Life* had some particularly good examples of alien creatures that felt unique and very interesting, both mechanically and aesthetically."

✓ On alien worlds, the binary between plant and animal may be different, with sentient plants, or creatures like this land-based coral from *The Eternal Cylinder*.





When designing new creatures, Alex Ries starts with a silhouette, then builds on detail.

These penguins from *Subnautica: Below Zero* have an innovative beak design; but when it opens, the beak blinds the creature.

Ries also points to ways that the technical limitations of a video game can inform the design of a creature.

"In games, technical limitations are quite important, particularly with size," he says. "A giant creature in the shallows will have terrain clipping issues, for instance. You have to make sure it looks interesting from the front because that's the attack direction."

This is more of a concern when there's a fully realised 3D simulation for a creature to exist in. Without those considerations, designers have more options.

Says Reisig: "Since we don't have constraints that many other sci-fi games have, like aliens having to fit into generic outfits or needing to be able to carry and use generic weapons, we try to embrace this freedom and give them unique and strange body shapes and extremities."

### EXTRA-TERRESTRIAL INTELLIGENCE

Most of the examples we've looked at here have been animals, without language, tool use, or any of the other things we typically call 'intelligence'. Once you start designing an intelligent species, the demands get far more complicated. "The point about intelligence is there's probably only a limited set of conditions to which intelligence is the right answer," Dartnell says. "Humans evolved in a chaotic, unstable climate in the Rift Valley of East Africa. And intelligence is also expensive. To have a large brain you need to provide a huge amount of energy to that brain."

To design an intelligent alien on another planet, Dartnell argues you'd need similar circumstances. There needs to be a reason

why this species developed intelligence rather than a simpler solution, such as running faster. Once it has that intelligence, it then has the challenge of feeding it. "It's probably not purely herbivorous," Dartnell says. "Which is why cows spend their entire day chewing and don't have time to invent tools."

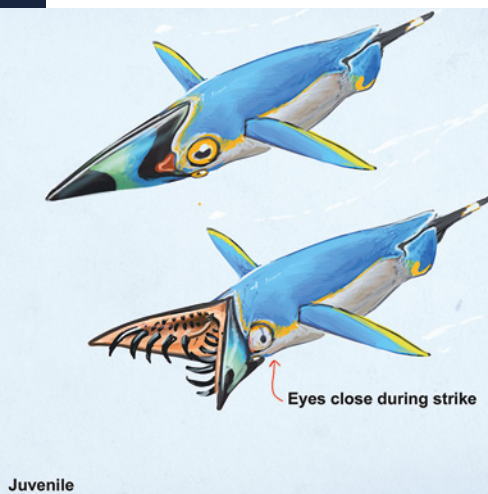
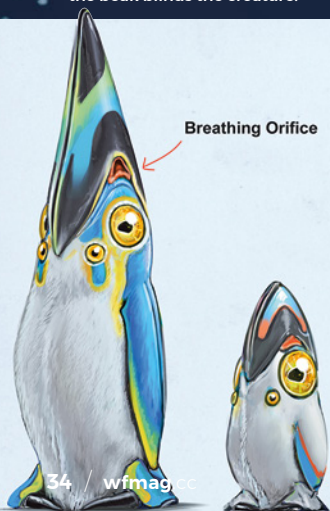
### NOT AS WE KNOW IT

Dartnell also cautions against designing aliens that look too familiar, however. "A general principle is that aliens often aren't alien enough, and are simply mixes of Earth animal components, or they've been made a different colour," he says. "It's not often you're truly surprised by how an alien looks. It could go a bit wilder."

### THE FERMI PARADOX'S INSPIRATIONS

"We try not to copy the visual design for our creatures from established sci-fi tropes and try to look to nature and art for inspiration," Jörg Reisig says. "But looking through our design inspiration folder, I found visual references to *Destiny*, *Magic: The Gathering*, *Dungeons & Dragons*, *District 9*, *Stellaris*, *Guild Wars*, or *XCOM*, while other creature designs are direct homages to *Sid Meier's Alpha Centauri*, the Cthulhu Mythos, Ursula K. Le Guin's Hainish Cycle, or [Cixin Liu's] *The Three-Body Problem*."

The Vent Garden in *Subnautica: Below Zero* anchors itself over hydrothermal vents to feed on the nutrients that spew out of them.



This is a goal shared across the board among the game designers and artists we talked to. "I think it's also important to use references and find inspiration, but to not get too restrained by it, either," Grinenko tells us. "You want this alien to have nine legs? Sure, it has nine legs now! This isn't Earth. We don't need to apply things from our world one-to-one on something else, and there can be thousands of reasons why that is. Maybe it doesn't make sense for horses on our planet to not have eyes, but maybe a horse-like creature on another planet has no problems with that, because it simply functions differently."

Bordeu also points to aliens looking far too terrestrial as a common flaw in some games. "I do feel we made that mistake with a couple of creatures in [*The Eternal Cylinder*], that they look too 'earthly,'" he admits. "But we just had to do so many creatures that it was hard being totally original with all of them. The biggest mistake I often see is just making creatures that look like normal animals that are 'stitched' together."

Even when taking inspiration from Earth organisms, Ries points out that many designers are drawing from too small a pool of sources. "I believe the only *true* mistakes one can make in art are to create in a way that makes you unhappy, or that hurts vulnerable people," he says. "However, more broadly, I believe we – including myself – rely too much on vertebrates as reference points. Creature design is dominated by aliens developed from beings related to us, perhaps with a few invertebrate touches thrown in. Partly this is because the only large land animals we have as reference are vertebrates."

He suggests that artists can break this habit by looking to Earth's pre-history for inspiration. "I encourage people to look into what life was like millions of years ago in the coal forests of the Carboniferous [period], with its six-foot-long millipedes, or the oceans of the Ordovician [period]," he says.

Even when drawing from fictional sources, there's a danger of seeming too familiar.

"If you're not actively aiming for it, I would always try to avoid copying an established alien trope, especially visually," Reisig says. "The player may get instantly familiar with the creature, but often it lacks originality, which makes the overall world-building of the game a bit boring. Also, I would be careful and deliberate with anthropomorphisms."

Dartnell points to *Subnautica: Below Zero* as an example of alien design done right. "The squid shark swims with jet propulsion – no vertebrate animal on Earth does, but there's no physical reason it couldn't," he says.

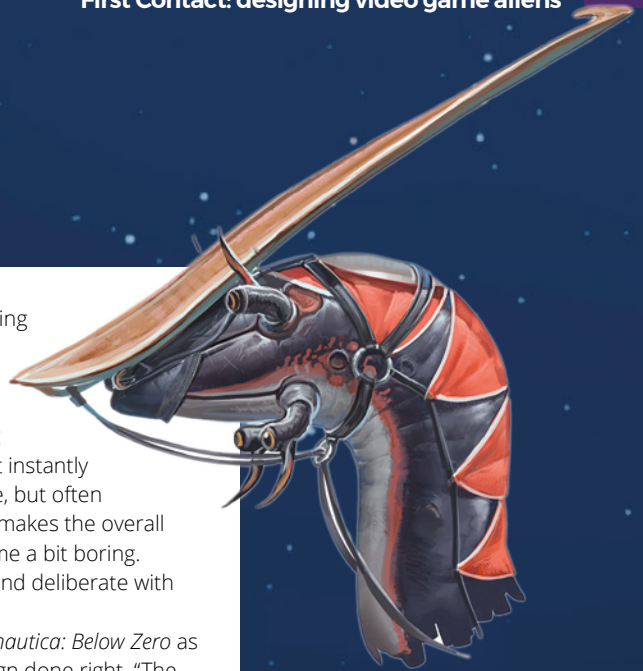
Of course, a huge difference between real science and science fiction is that in the latter, there's nothing wrong with leaving something to the audience's imagination. "I've learnt that sometimes less is more,"

Grinenko says. "You don't actually need to show everything because players are creative and clever. I do have ideas about how the aliens move around and do things, but I've also read really interesting interpretations in our community that could work just as well."

Perhaps the most important thing to bear in mind is that to these extra-terrestrials, *we* are the aliens. "The *Half-Life* series gave us some of the most amazing and truly alien designs as well," Ries says, "made even more interesting because many of the creatures were simply animals dropped unwillingly into our world, trying to survive as best they could. Not monsters, just beings like us."

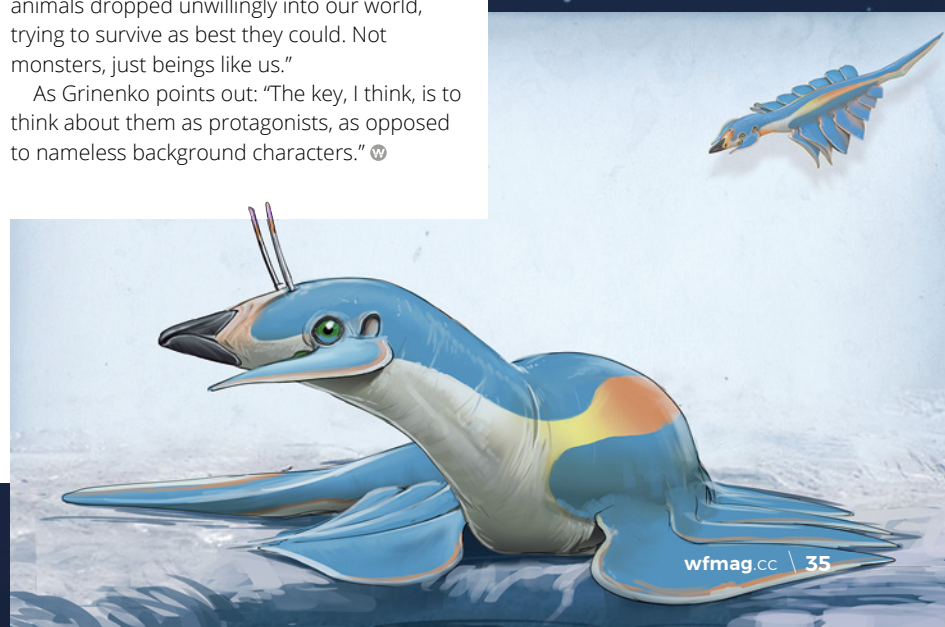
As Grinenko points out: "The key, I think, is to think about them as protagonists, as opposed to nameless background characters." 🗨

## "THE SQUID SHARK SWIMS WITH JET PROPULSION"



▲ On top of his speculative evolution work for games, Alex Ries has also created his own richly detailed alien civilisation, the Birrin.

▼ While *Subnautica: Below Zero's* creatures show huge variety, they clearly share a common ancestry.



# In video games, fun is a four-letter word



## KIM JUSTICE

Kim Justice is a YouTuber, streamer, and writer who specialises in the world of retro gaming. If she isn't making lengthy documentary videos about old games and companies, she's probably chatting and mouthing off about them live to a dedicated handful of people.

For someone like me, with a rapidly ageing brain that's starting to feel more like a woolly pustule than a functioning organ, the world of trending games stories only gets tougher to navigate, as new concepts seem to continually be put forward – some of which people seem to like the sound of, others which inspire choruses of hatred. Forget about a signal-to-noise ratio on Twitter – it's more cacophonous than a choir of ZX Spectrums loading tapes, and actually getting a firm grasp on any concept feels more like hard work than anything else. Perhaps this is appropriate?

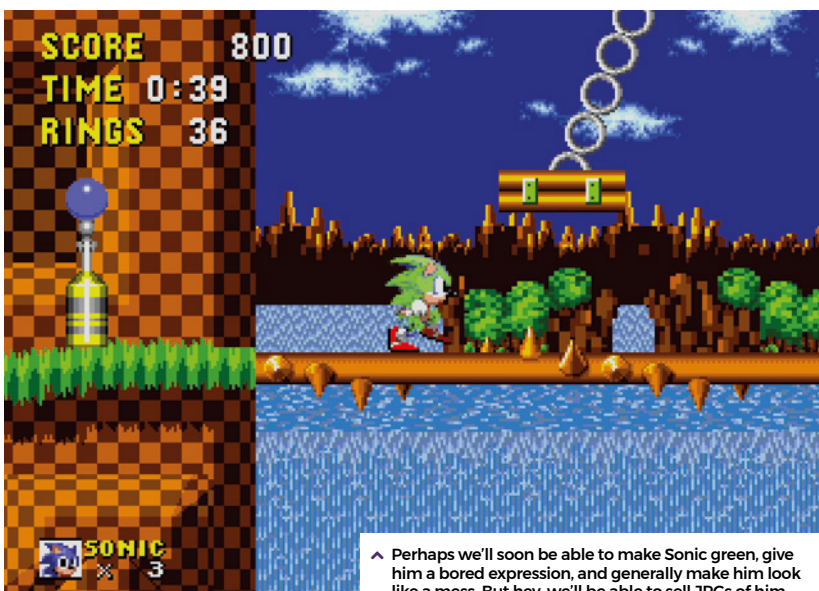
After all, Square Enix's president Yosuke Matsuda has decided to usher in the new year with a letter that talks enthusiastically about investor-exciting things like 'NFT', 'blockchain', and 'metaverse' that, to date, I have frankly little understanding of, nor do I have the inclination to enquire further about. The thing that struck me about the letter, more than anything, was an

admission that those who "play to have fun" have voiced "reservations toward these new trends, and understandably so", before talking about the incentives that these concepts provide to "players who contribute", relating this to people who, for example, create custom skins for characters, weapons, and so forth.

The rather depressing takeaway from this, for me, is an ever-increasing chasm seemingly developing between 'fun-havers' and 'contributors'. Aren't we all supposed to have fun in a game, in one way or another? Isn't that the main point of the exercise? Of course, there are many different ways to have fun with a game, whether it's simply casually playing through it or breaking it down completely from within, or indeed to putting a personal imprint on the game. We should all be equals in the pursuit of being entertained, but at its core, this rather naked pursuit of the virtual dollar feels like games are going to create their own class system of sorts. Is this really what we want?

Wizened and decrepit I may be, but I do understand that these things aren't going away. Only a couple of weeks ago, I heard about those who created the games of my youth, your Will Wrights and Peter Molyneuxes, enthusiastically embracing the concept of 'blockchain gaming' (whatever that is), presumably as a means of clinging onto relevancy and, of course, making some capital. My world of retro is hardly immune to money-making and people treating the most popular and common games of days gone by as investments that hope to secure some intangible future, rather than just something that you enjoy, simply as it is. While my people will decry and mock all of this as a load of virtual Beanie Baby nonsense, a whole group will be on the other side to say that we're a bunch of future-hating Luddites.

In the end, we'll just be even further apart, and the only real winners are the people at the top who profit from our separation. And really, that's what sucks the most. 🙄



^ Perhaps we'll soon be able to make Sonic green, give him a bored expression, and generally make him look like a mess. But hey, we'll be able to sell JPCs of him.

# WIN A 24.5" IIYAMA G-MASTER GAMING MONITOR

Here's a chance to get your hands on a 24.5-inch gaming monitor, courtesy of the lovely folks at Iiyama. One lucky Wireframe reader will get an Iiyama G-Master GB2590HSU Gold Phoenix monitor, which has a 1920×1080 resolution and 240Hz refresh rate, sent direct to their home.

## Here are the juicy tech specs in full:

- 24.5" IPS panel
- 240Hz refresh rate
- FreeSync Premium
- 0.4ms response time (MPRT)
- 1920×1080 resolution
- 1 × HDMI and 1 × DisplayPort inputs
- Stereo 2W speakers
- USB 3.0 hub




Immerse yourself in the game with the 240Hz GB2590HSU Gold Phoenix. The Gold Phoenix is the ultimate monitor choice allowing you to take full advantage of your gaming potential.


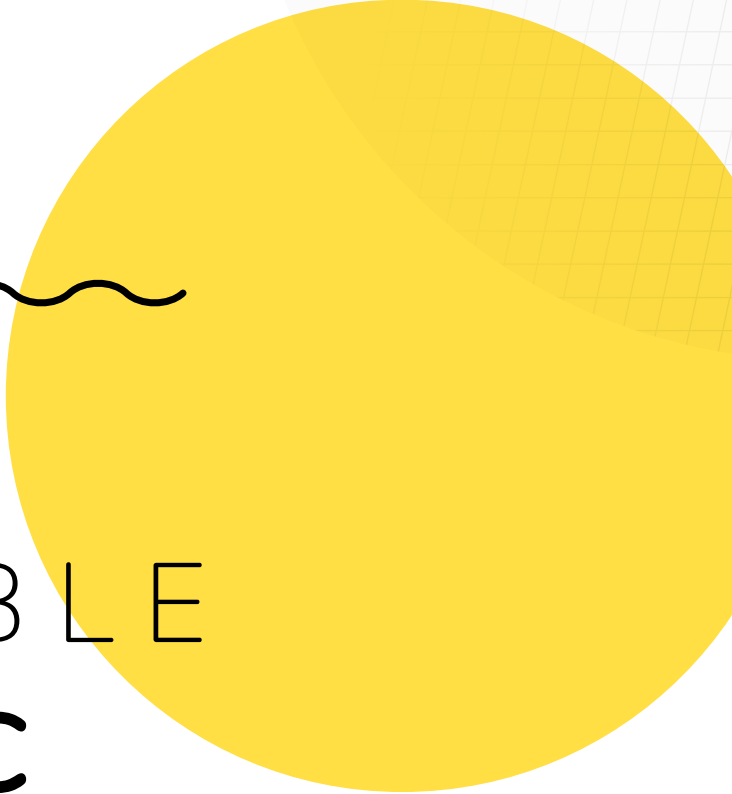
Packed with the latest technologies, including FreeSync Premium, the 24.5-inch Gold Phoenix features a 240Hz refresh rate and a stunning 0.4ms response time (MPRT), making sure your equipment will never hold you back.

## You can enter at [wfmag.cc/iiyama](https://wfmag.cc/iiyama)

Competition closes on Monday 28 February 2022. Prize is offered to participants worldwide aged 13 or over, except employees of Raspberry Pi Trading, the prize supplier, their families or friends. Winners will be notified by email no more than 30 days after the competition closes. By entering the competition, the winner consents to any publicity generated from the competition, in print and online. Participants agree to receive occasional newsletters from Wireframe magazine. We don't like spam: participants' details will remain strictly confidential and won't be shared with third parties. Prizes are non-negotiable and no cash alternative will be offered. Winners will be contacted by email to arrange delivery. Any winners who have not responded 60 days after the initial email is sent will have their prize revoked.



# 20 MEMORABLE NPC PERFORMANCES



From walk-on parts to pivotal side-kicks, our personal pick of superb, non-human, non-player turns in video games

**T**his month's cover feature (see page 6) got us thinking about digital humans. Whether they're almost photorealistic or hyper-stylised, rendered in 3D or hand-drawn, non-player characters (NPCs) have been a pivotal part of video games for decades. So with this in mind – and in no particular order – here's a selection of NPCs that have captured our imaginations, with a selection of honourable mentions added in for good measure. You're bound to have suggestions of your own, so send them our way on Twitter: [@wireframemag](https://twitter.com/wireframemag).

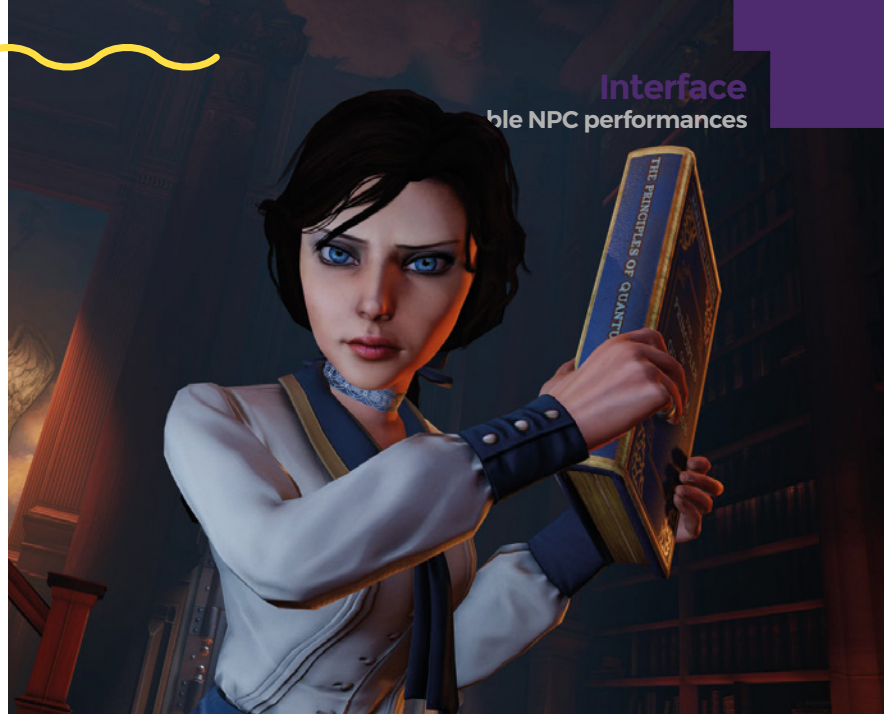




## PSYCHO MANTIS

THE METAL GEAR SOLID SERIES

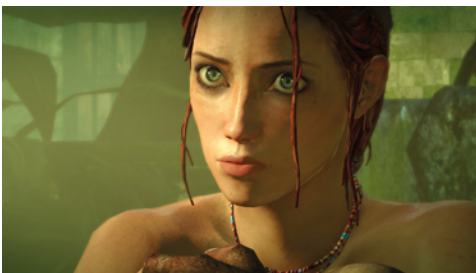
Rail-thin and clad in a gas mask, Psycho Mantis immediately stood out as one of the most indelible and borderline terrifying members of *Metal Gear Solid's* cast: back in 1998, Mantis's fourth-wall-breaking antics felt new and distinctly unnerving. According to Hideo Kojima, he was "yelled at" by his superiors at Konami for coming up with the sequences where – among other things – Psycho Mantis reads the player's memory card or turns on their controller's rumble function. The yelling was worth it: to this day, Psycho Mantis remains one of the eeriest characters in gaming.



## ELIZABETH

BIOSHOCK INFINITE

Compromised though the core game was, largely thanks to a long and difficult development cycle, *BioShock Infinite* still showed flashes of brilliance. One of those flashes was, of course, Elizabeth: more than a companion to the player, she quickly emerged as a rounded character in her own right. Certainly, her childlike curiosity and resourcefulness gave the game a humanity that was largely missing from the rest of the robotic NPCs that dutifully went about their business on the floating city of Columbia. Incredibly, Elizabeth was almost cut during *Infinite's* production. All we can say is, the game would've been all the poorer without her.



## TRIP

ENSLAVED: ODYSSEY TO THE WEST

Ninja Theory's adventure wasn't a hit in 2009, which means that few got to see how impressive its characterisation and acting was. Andy Serkis plays the lead, Monkey, but for our money, the best character in the game was his sidekick, Trip. Superbly performed by Lindsey Shaw, she's a sharp, spiky character at first – and the gradual transition of her and Monkey's relationship from antagonism to friendship gives *Enslaved* its human core. Mechanically, the game's 3D is something of a product of its time; the quality of its writing (co-scripted by Alex Garland), performances, and character design, on the other hand, still look fresh today.



## NICK VALENTINE

FALLOUT 4

The fourth mainline *Fallout* was a bit of a disappointment, with samey quests, a lack of player agency, and a general feeling that you should've been playing *New Vegas* instead. The one shining light, though, was Nick Valentine – synthetic private eye with a proper Raymond Chandler-style air to him. But it didn't stop with Valentine standing out like a sore gumshoe in this world of one-armed leather jackets and questionable meats: the bot had the memories of a real human, and the tragic history that came with those memories alongside the knowledge he was his own person. Definitely a recipe for being a bit muddled up in the head. Valentine was, of course, useful in a fight and handy for help with hacking, but it was the raw humanity of a synthetic man that carried him to the heights of being an NPC great. ➔

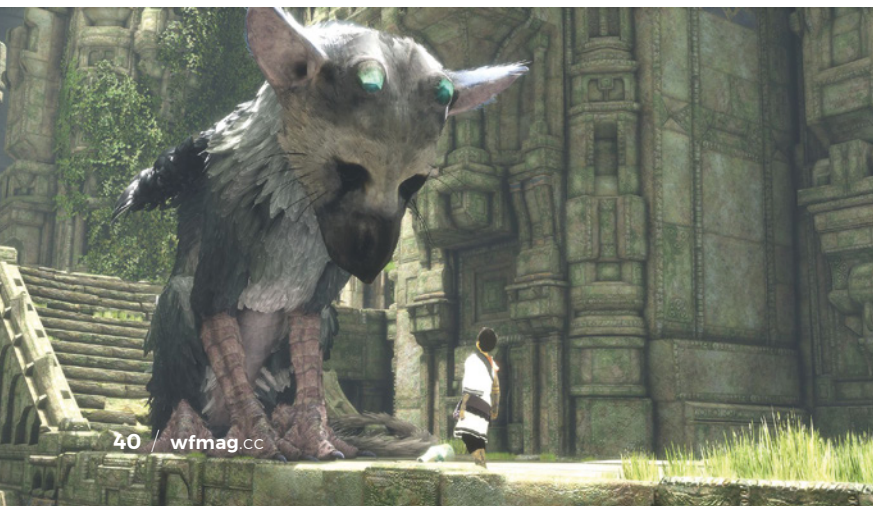
## CORTANA HALO SERIES

Master Chief's a blank slate by design: he's a helmeted, stoic warrior tailor-made for players to inhabit. The *Halo* series therefore needed someone with a bit of humanity to cut through all the searing lasers and sci-fi militarism, and Cortana is just such a character. Although technically not human – she's an AI constructed from the brain of Dr Halsey, as per *Halo* lore – Cortana is arguably one of the series' most likeable personalities. Little wonder she's grown from a mechanical convenience to a pivotal strand in the *Halo* games' story. Full credit to actor Jen Taylor, who's brought warmth and dry wit to Cortana – even as the character's appearance has varied from game to game.



## TRICO THE LAST GUARDIAN

Evolving the player-NPC partnership concept Fumito Ueda started in *ICO*, *The Last Guardian* introduced Trico – an avian-feline hybrid whose prodigious bulk often fills the screen. As a game mechanic, Trico could be infuriating; several of the game's puzzles required the massive beast's co-operation, which wasn't always forthcoming. As a piece of character design, though, Trico was another success: it's rare in games to encounter what feels like a living, breathing creature. In its idle moments, Trico would become distracted by nearby objects, roll playfully onto its back, or let out a weary yawn. When everything in *The Last Guardian* was working right, it was easy to forget that the beast you were interacting with was a clever amalgam of textures and polygons.



## RESETTI

THE ANIMAL CROSSING SERIES

Furry mortgage broker Tom Nook would've been the obvious choice, but we've gone for Resetti, the legendarily angry character who'd burrow up through the ground and sternly warn the player about the dangers of turning off their game without saving it. The ill-humoured mole has long been a contentious figure in the *Animal Crossing* series, and his role has gradually shrunk over time: in *New Horizons*, he's all but unemployed. For us, though, Resetti's coarse, rage-filled personality served as a hilarious counterpoint to the more demure characters found elsewhere in the *Animal Crossing* games.



## YORDA

ICO

Designer Fumito Ueda's debut hinged on the partnership between its two leads: the boy of the title, left for dead in a vast citadel, and the ghostly girl he finds there. Thanks to some exquisite design and animation, though, the pairing of player and NPC proved a triumph: Yorda isn't the most rounded character in gaming – her otherworldly, unknowable quality is sort of the point – but her presence in *ICO* is as pivotal as the setting in which it takes place. Even when the shadow monster-bashing combat begins to grow tiresome, the desire to guide and protect Yorda remains intact.



## FRANK TENPENNY

GRAND THEFT AUTO: SAN ANDREAS

Tenpenny is a Los Santos cop who, against some pretty stern competition, emerges as one of the city's most baldly amoral figures. Supposedly set on stamping out gang violence, he instead foments it; far from minimising the spread of drugs, he helps to further it. Like most compromised characters, Tenpenny believes the ends justify the means – right up until the moment he receives his comeuppance, he insists that his corrupt antics were just: “I took the trash out! And I'd do it all again!” A special mention here, too, to Samuel L. Jackson's full-throated performance.



## THANE KRIOS

MASS EFFECT 2 & 3

Even with so many *Mass Effect* companions to pick from, it was still easy to choose just one: Thane Krios. Assassin, holy man, drell with a wonderful voice, Thane's story is encapsulated by the fact he suffers from a terminal illness. The result is a study in regret, pride, religion, family, love, and redemption. Thane doesn't regret who he's killed, but does regret not being there for his son. That's without even mentioning his perfect recall, meaning everything he has ever lived – all of his regrets – can be re-experienced in absolute clarity. A beautiful, haunting, tragic, and life-affirming character.



## LADY DIMITRESCU

 RESIDENT EVIL VILLAGE

An internet sensation before the *Resident Evil* sequel even came out, imposing noblewoman Alcina Dimitrescu quickly became one of the most memorable characters in the long-running series. Why? Well, that striking appearance is certainly part of it, but there's also her rich history that gradually becomes clear as the game goes on. Far from the flatly murderous, Terminator-like presence of *Resident Evil* villains like Mr X, Dimitrescu has both personality and a back story – she was a jazz singer in her younger days – and even her own twisted family in the shape of her three 'daughters'. Plus, of course, there's that massive, elegant hat.



## THE MERCHANT

 RESIDENT EVIL 4

Unlike most video game shopkeepers, *Resident Evil 4*'s The Merchant doesn't bother to pretend he's your friend, or that he cares about your life. Instead, he'll ask you one of two questions: “What are you buying?” or “What are you selling?” Sometimes he'll throw in an “I'll buy that at a high price!” when you're selling something especially valuable. He's also fully mobile, carrying his wares around in an oversized jacket and appearing in the oddest of places – behind a building in a Spanish village overrun with parasite-infested people, for example. The Merchant is genuinely bizarre, and stands out like a shopkeeper in the middle of a supernatural war zone would. He's also utterly fantastic, and a constant reminder that the game he's in isn't *entirely* serious and should be played with a big old smile on your face. ▶

## Interface

20 memorable NPC perform



### SULLY THE UNCHARTED SERIES

There's a big chunk of our collective heart always with Chloe Frazer, who goes through something of a journey through the *Uncharteds* she appears in, but the nod goes to Victor "Goddamn" Sullivan here – ever-present (ever-cigar-smoking) scoundrel, scam artist, and surrogate father figure for our hero, Nathan Drake. Initially just the knowledgeable older guy, able to talk the player through most events with the benefit of his decades of experience, Sully soon morphs into the real heart and soul of Drake's adventures. By the time the fourth game rolled around – and all of Sully's "I'm too old for this shit" dialogue – you'd be forgiven for experiencing a genuine feeling of loss as the near-pensioner hung up his adventuring boots. Though he certainly didn't hang up his scamming hat.



### SADIE ADLER RED DEAD REDEMPTION 2

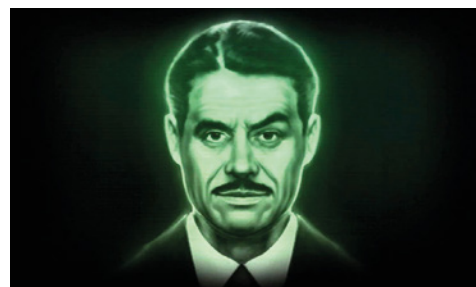
Rockstar doesn't have a stellar reputation when it comes to writing women, but Sadie Adler goes a long way to redeeming the studio. Far from the typical ditz, unintelligent, or generally useless roadblock type often seen in the *Grand Theft Auto* games, Sadie is instead a woman travelling through a complete arc you get to witness as protagonist Arthur Morgan. She starts out a dejected widow, haunted by the horrific treatment she's been through and the murder of her husband. She becomes an integral part of the gang that takes her in, a staunch ally of Arthur, and a genuine asset as things progress – later on becoming a skilled bounty-hunter. It's quite the journey, all finished off with the cherry on top of the truly touching relationship she and Arthur have. Special mention has to go to Dutch, who is also fabulous, though his journey ('downfall') doesn't feel quite as impressive as Sadie's.



### VALENTIN

GOLDENEYE 007

In a game where almost everyone wants to kill you, and where even your sidekick, Natalya, tends to block doorways or blunder into the paths of bullets, Valentin Zukovsky was a reassuring presence. Sure, he was an arms dealer and all-round low-life, but he was just about the only character who'd pop up occasionally to provide assistance – dishing out a bit of info here, stalling a bunch of bad guys there. Plus, there was something endearing about Valentin as depicted in the game: his dialogue was pithy, while the N64's hardware meant that he looked like a stack of cereal boxes with a photograph of Robbie Coltrane glued to the front.



### ROBERT HOUSE

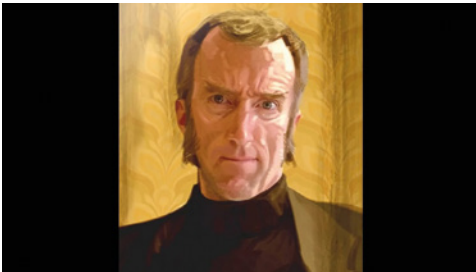
FALLOUT: NEW VEGAS

You see the name 'House' in a gambling-heavy game, you notice the quest title 'The House Always Wins', you think you've got yourself a cute pun for the obvious antagonist of the tale. Except nothing's that simple in *New Vegas*. Not only is Mr. House full of depth, offering an understandable and – some would argue – rational perspective on how humanity can move forward in the wake of nuclear Armageddon, but he's brought to life vividly by the sadly departed René Auberjonois. Without House, Obsidian's buggy masterpiece wouldn't have been half the game it ended up, and YouTubers would have no topics on which to base their three-hour-long video essays.

## CAVE JOHNSON

PORTAL 2

There's a character being 'brought to life', then there's a character 'brought to life by J.K. Simmons'. Cave Johnson is your archetypal eccentric figure; the man who started Aperture Science (originally a shower curtain manufacturer) and who harbours a love/hate relationship with moon rocks and lemons. He's never seen in the flesh, per se, but his presence is felt throughout *Portal 2*, with Simmons making you care surprisingly deeply about a billionaire who does little other than rant, and who never makes an appearance outside of some paintings and photos.



## KIM KITSURAGI

DISCO ELYSIUM

Far more than a mere foil to Harry Du Bois, *Disco Elysium's* protagonist – though that is a large part of his role – Kim has his own inner life, his own history, his own moral outlook on existence. He doesn't just react to what you decide to do as the player, he becomes someone you actively rely on as things progress – always dependable, always a rock, often difficult to break down the walls of, every interaction with him feels earned, special, something you look forward to. Kim is a big part of why *Disco Elysium* is one of the greatest games of the past few years.



## ALYX VANCE

HALF-LIFE 2

A cynic might say Alyx was put into Valve's FPS sequel as an emotional crutch, given protagonist Gordon Freeman's absence of dialogue. But Alyx is more than the sum of her NPC parts, acting both as an aid and an integral part of *Half-Life 2's* plot. Her role only grew in Episodes One and Two, resulting in what still ranks as one of the most heart-wrenching (and as-yet unresolved) endings in gaming history. It wouldn't have had the same impact were Alyx not so well written by Valve, and fantastically performed by Merle Dandridge. It was of little surprise that *Half-Life: Alyx* turned the beloved character into a playable hero.



## BILL

THE LAST OF US

He wasn't in *The Last of Us* for long, but Bill left a lasting impression on players the world over. Scarred physically and emotionally, he nonetheless carries on as a resourceful and smart survivor, fortifying an entire town against the infected hordes and maintaining some level of stability to his existence. Though not his sanity. It's the glimpses – sometimes subtle, always fleeting – of Bill's life outside of being a survivor that make him truly engaging: he owes Joel favours, but why? He plays chess with himself a lot. He's paranoid, quick to anger, but has a strong moral code. The time you spend with Bill doesn't feel anything like enough. 🗿

## HONOURABLE MENTIONS

### RODIN

BAYONETTA

Immortal fallen angel, the most powerful in all of the *Bayonetta* series, now runs a bar and dresses as Santa.

### ROACH

THE WITCHER 3

Imagine a horse that actively works against you and often ends up stuck halfway through the floor somehow. You've imagined the wonderful Roach.

### HK-47

KNIGHTS OF THE OLD REPUBLIC

Lives on a ship full of flesh-based creatures, engages in countless missions alongside them, never stops referring to them as 'meatbags'. A true gem.

### BT-7274

TITANFALL 2

Had absolutely no right to be as emotionally impactful as he was, BT is the modern-day Johnny Five and *has to be adored*.

### GORO MAJIMA

YAKUZA SERIES (PLAYABLE IN YAKUZA 0, MIND)

A playable character before he went truly wild, Majima is an incredible sort-of antagonist in the rest of the *Yakuza* series.

### SANS

UNDERTALE

That cheeky grin, those *awful* endless jokes – Sans was an internet meme-in-waiting the second *Undertale* released. He's also *wonderful*.

### SAMUEL

### BEECHWORTH

DISHONORED

The moral backbone of the first *Dishonored*, Samuel would always take you where you needed to go by boat – but he wouldn't always approve of your actions.

# Toolbox

The art, theory, and production of video games

**46. Design Principles**

Rapid prototyping, and the likelihood of AI-made video games

**48. CityCraft**

Konstantinos offers some top tips for better game city design

**50. Dark Souls**

Make your own Souls-like messaging system in Unreal Engine 4

**56. Narrative Design**

Why DLC stories are often better than the original base game

**58. Concept art**

Atomhawk Studio shows you how to turn ideas into unique visuals

**62. User research**

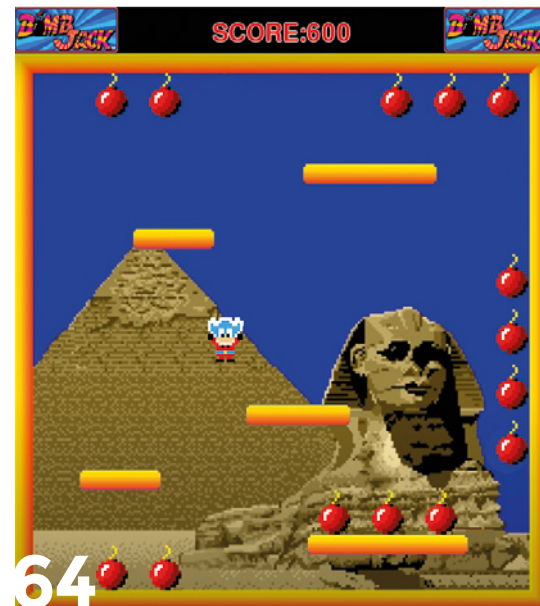
Build a career in a fascinating new area of the games industry

**64. Source Code**

Take to the skies in our homage to the arcade hit, Bomb Jack

**66. Making games in Sketch**

This vector graphics app can also be used to design video games



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▲ Travel the world and diffuse explosives in our Pygame Zero homage to *Bomb Jack*. See page 64.

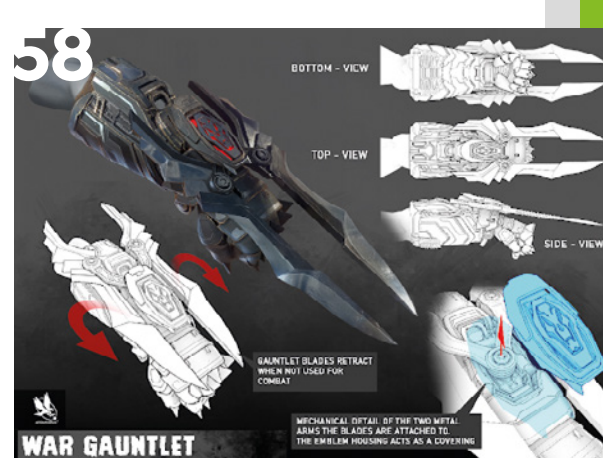


▲ Find out how to add a *Dark Souls*-style messaging system to your own Unreal Engine 4 projects with our guide on page 50.

✔ Want to make a well-designed city like *Planescape: Torment's Sigil*? Konstantinos has ten top tips for you on page 48.



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✔ Atomhawk Studio show you how to communicate your ideas through concept art on page 58.

◀ User research? What is it, and how can you get a career in it? Find out from an expert on page 62.

# The principles of game design

Could AI help developers prototype games – or even design a triple-A hit from scratch? Howard has a few thoughts



**AUTHOR**  
**HOWARD SCOTT WARSHAW**

Howard is a video game pioneer who authored several of Atari's most famous and infamous titles. His new book, *Once Upon Atari: How I Made History by Killing an Industry*, is out now. [onceuponatari.com](http://onceuponatari.com)

**M**y wife came running into my office the other day: “OMG! You’ve got to see this!”. I follow her to a monitor where she shows me a demo video of the Pixicade app. There it is! Kids creating video games from drawings. Back in the eighties, I initially drew my first Yar on some graph paper, but it took weeks of work to see it flying around on a display. Yet here are kids at home, drawing their ideas, capturing them and then playing them... at least on a simple level. Impressive. I recognised this as a rapid prototyping tool, and it brought to mind the first time I heard about this in video games. It was at Atari.

When I share the development tools we used when video games were still in their infancy, modern programmers laugh. They laugh

at the absurdity of life without decent dev tools, but they seem nervous too. Are they wondering if their work rises to the level of their environment?

Many was the day I'd wake up with a grand idea, only to see it wither when faced with the threshold of work, expense, and time required to 'try it out'. Vision is a fun fancy, but when the total cost for testing something is high, experimentation is reserved for those resourced enough (or crazy enough) to invest in a 'possibility'. Is commitment to vision enough? Neurotic devotion? Either way, the best path to expanding the horizon of possibilities is to lower the cost of the experiment. That's what rapid prototyping is – an effort to lower the cost of realising and evaluating game concepts.

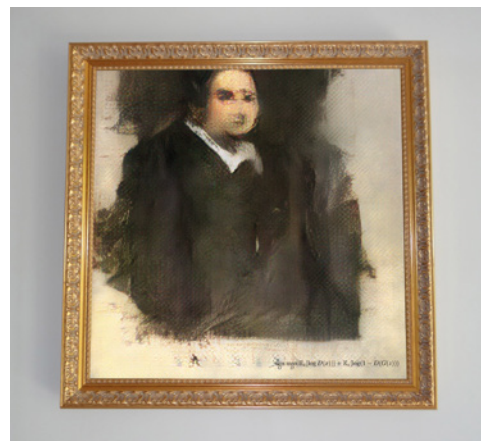
Today, Unreal and Unity join a variety of tools available for rapid prototyping. Unreal is a great name for the engine, because tools like this were unthinkable back in the day... which is not to say they weren't thought of, or more accurately, 'wished for'. And like any entertainment company, there were people at Atari focused on making wishes come true.

Steve Wright, who was head of VCS development at the time, launched just such a project. His idea: instead of making a game, let's make a system in which we can quickly approximate various gameplays to test them out. I'd like to say this was the birth of rapid prototyping, but it was merely the moment of insemination. This pregnancy would stretch out over many years before any viable birth would occur.



▲ Howard Scott Warshaw at his Atari workstation. Rapid prototyping and AI-driven game design were mere dreams at this point.

▶ AI-made games don't exist yet, but AI-rendered paintings do. This one sold for nearly half a million dollars at auction in 2018.





◀ **Rapid prototyping?** With an iPad and a set of markers, kids can create simple arcade games with Pixicade.

The ability to try new game features, mechanics, and configurations to see if they feel worth pursuing was always the dream. But we couldn't realistically imagine a system (or even an interface) that could get us there at the time. Game dev tech has come a long way.

We've reached the point where AI and machine learning algorithms are simulating players to test (and sometimes predict) new game features. Non-human systems are assessing human engagement and entertainment value. It's an interesting place to be. Touring through the Turing test, and unable to tell if our guide has gooey guts or gears? Where does this go?

Ultimately, the computer could map my brain and use that info to instantly generate a game ideally suited to my tastes and perfectly tuned to my capabilities. How fun would that be? Maybe not much. If we're all playing unique games contoured

to us, the competitive angle's lost. How can we compete if we're all playing different games? And isn't competition one of the major motivators for playing in the first place? And what about being in first place?

To support competitive gaming, we need a discrete number of different games, or at least genres. Then the brain map doesn't have to go all the way to creating a special unique experience chosen just for me, it simply selects the best match from a limited pool of alternatives and away I go. Then we would have narrow casting. The downside is that new possibilities are limited. The upside is that we don't have to wait for it since it already exists. The future is now!

**"I believe AI neither takes over humanity nor controls it"**

These algorithms are mainly about adding bonus elements or monetisation. But could it create new gameplays? Would it create new genres? And if it did, would these new elements be tuned to human satisfaction or algorithmic affirmation, which may or may not be the same thing? I believe AI neither takes over humanity, nor controls it. But machine learning algorithms could ultimately realise that humans are not worth accommodating and prefer machine entertainment over human satisfaction. What then? We spend our lives chasing the dream and it turns out to be the nightmare? Is our entire existence merely a *Twilight Zone* episode?

Perhaps. But let's move back to the past we've already escaped. Back then, rapid prototyping was vapourware. Often at Atari, we'd wish for some magical synthesising ability to manifest our concepts with less sweat. That's what people do on breaks.

But some people seem to remain on break. They blame a limited dev environment for rendering their amazing ideas unreachable, thereby justifying both their 'genius' and their inaction. That's when Jerome, my dearly departed designer and friend, liked to quote George Herbert: "It's a poor craftsman that blames his tools."

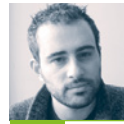
There are two kinds of visionaries: some adapt their vision to the tools at hand. Others choose to wait around 'until the tools catch up'. At Atari, the best game makers did what they could (and sometimes more) with the tools available. That's what you do when you can't wait to create. You do what you can with what you've got. This way you don't seem like such a tool. 🤖

## POPULAR MECHANICS

I grant the possibility that AI could be the most effective game designer. But I do so while simultaneously granting the possibility that an AI game designer might simply produce a 'Frankenstein design' of the sort we occasionally got from Atari marketing. In other words: let's determine all the 'popular' features and mechanics from prior hits and jam them together into one remarkable super-game that can't miss! Until AI learns to simulate player *enjoyment*, it will be hard-pressed to pull off any substantial video gaming innovation. At least in my humble opinion.

# Ten tips for a better game city

Some super-condensed city building advice for video game designers and world-builders



**AUTHOR**  
**KONSTANTINOS DIMOPOULOS**

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**D**istilling something as complex as the process of imagining and creating a complete virtual city into just one piece of advice is impossible, but a selection of hints and tips can be helpful. And this is why I compiled this list of the ten most important aspects of city design that you should keep in mind when creating a video game urban environment. So here goes:

**1. Things must make sense, and places must feel internally coherent.** Even the most exotic of fantasy sci-fi universes has to obey and be built according to certain rules, and, once established, such rules need to remain unchanged. So, gravity (or the lack thereof) will dictate how water flows and how engineering works, societal organisations will determine the existence of noble rulers and where they live, and local materials will influence the architecture

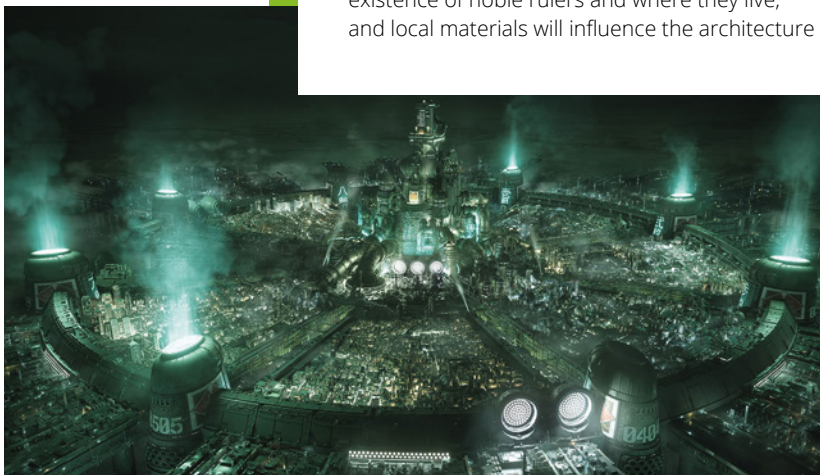
of landmarks and residences. Constructing an illusion of cohesive realism is what will lead to believability and support the audience's suspension of disbelief, which can in turn lead to a spatial sort of immersion.

**2. Cities should be approached and thought of on the urban scale.** Obvious though this may sound, designers often conceptualise their settlements on the architectural level, and treat them as large and complex buildings to be designed, not planned. Architecture, of course, is an important aspect of any urban space, but a city is infinitely bigger, more complex, and intended to address a different level of functions and societal needs. Urban planning, city design, urbanism, and geography should be applied to it. Keep in mind too that everything which exists within the urban fabric has been planned by someone (whether institutionally or not) to serve a particular purpose.

**3. Make towns memorable, not just convincing.** Every city on Earth is, by definition, realistic. Not all of them are memorable, though. Places need unique characteristics to be strongly remembered, and virtual places even more so. An impressive landmark, unexpected architectural styles, distinct soundscapes, a harsh climate, outlandish festivals, dominant and emphatic ideologies, vast palaces and public parks, and ancient histories can all make a place stand out.

**4. The polis is the people.** A city is much more than its built environment, and its systems extend

▼ *Final Fantasy VII's* Midgar is a memorable and legible city; its class structure is obvious, and Shinra's central HQ sets the tone.





way past its transportation and power networks. A city is also the people living in it; the society that gives the urban fabric life, and constantly reshapes and uses its spaces. A city is its beliefs and traditions and gossip and struggles. What's more, the city and its physiognomy are influenced by everything in and around it: animals, plants, waste disposal systems, arts, climate, hinterland, fashions, topography, technology, religion, and vehicles.

**5. Where? When? Why? How big?** These are the four fundamental questions every planner of imaginary settlements has to answer. Even the simplest village has to be located somewhere (by the sea, in the mountains, on national borders, etc.), during an era that will define societal norms or technology levels, and it must have been initially founded to serve some need. Size is crucial as it determines a city's complexity, needs, and structure. A metropolis vastly differs from a village not only in size, but in the number and type of functions it incorporates, and even the types of society it fosters.

**6. Urban functions are of paramount importance.** Urban functions are what a city is meant to do; the reasons it exists. Contemporary examples of functions include residence, commerce, transportation, production, administration, leisure, and education. It is common for mid-sized cities to be defined by a dominant function, and we can thus speak of industrial cities, hub towns, mining towns, and so forth. Urban functions are expressed on actual space as land uses; the zones in *SimCity*, for instance, define land uses.

**7. Form follows structure.** Every city has a structure that determines the topology of its elements. A structure is effectively the spatial allocation of a city's land uses, and is usually organised around a dominant centre and specialised sub-centres and zones. Different types of areas and districts will have to be arranged in a pattern, such as concentric rings, along a linear axis, or even like the two-tiered, pizza-like structure of Midgar in *Final Fantasy VII*.

**8. Abstraction matters!** Not everything can fit in a game city, and even the biggest of our medium's metropolises would have trouble challenging the size of a small, real-life town. Everything from



▲ Developed by Gamious, *Lake* put equal emphasis on the physical town and the menagerie of people living in it. (Full disclosure: I worked on this game.)

geographies to the number of buildings per block has to be abstracted. Abstraction doesn't need to be uniformly applied to the entire urban space, however – important landmarks and locations should be more detailed. In *Assassin's Creed Syndicate's* London, for example, Trafalgar Square or the Houses of Parliament were recreated in an almost 1:1 level of detail, whereas everything in between was hugely simplified.

**9. Roads must feel right.** Grids of roads are very common, but breaking up the grid and varying block sizes can add much-needed variety and local character. Additionally, avoid making all roads the same width. There should be simple hierarchies ranging from the narrow local roads, to the wider collector arteries, to the large civic highways. Oh, and avoid giving your roads sharp right angles – they're rare in real life and don't look convincing in a game, so use T-junctions instead. Also consider the type (or types) of vehicles or beasts of burden the transportation of goods and people will depend on, and try and imagine their requirements and metrics.

**10. All cities have histories.** Cities are the combined products of history, planning, and geography, and their evolution never really stops. History enriches them with artefacts, old centres, narratives, culture, ruined cathedrals, forgotten districts, and different architectural styles. Cities are works in unending progress. They never cease being built and rebuilt, modernised, demolished, changed, and updated. Showcasing this activity is a good idea, as is remembering that cities evolve according to certain rules. They tend to grow from villages to towns to cities and then to metropolises, and also tend to form historical layers. 🗺

## READ ME

Researching specific cities, their history, planning, and urbanism as a whole is important if you want to come up with great concepts and convincing structures for virtual settlements. Here are a few books to get you started: *The City Shaped* by Spiro Kostof (Thames & Hudson), *101 Things I Learned in Urban Design School* by M. Frederick and V. Mehta (Three Rivers Press), *The Image of the City* by Kevin Lynch (The MIT Press), and *The City in History* by Lewis Mumford (Harcourt).

# Make a Dark Souls-style messaging system in Unreal Engine 4

Allow players to leave one another handy in-game notes by following our guide



**AUTHOR**  
**RYAN SHAH**

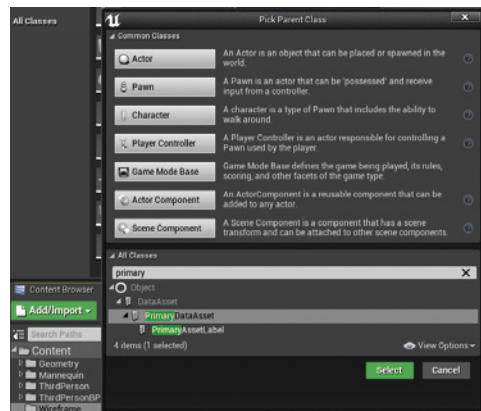
An avid developer at The Multiplayer Guys with a strong passion for education, Ryan Shah moonlights as KITATUS - an education content creator for all things game development.

**A**llowing your players to communicate in your game, even in a passive way, can add extra layers of engagement and depth. One of the benefits of a *Dark Souls*-style messaging system is that players can feel like they have an impact on your game world, whether that be in the form of a friendly warning or a well-crafted trick left for other users. The *Dark Souls* series has mastered leaving an imprint in a way players all over the world can read, understand, and enjoy. Today, we'll be learning how to deploy a similar system in your own Unreal Engine 4 projects.

The messaging system can be broken down into two distinct parts: reading messages and writing them. To write a message, we must first understand why the *Dark Souls* games have employed the messaging system in the way they have: for safety and inclusion. Having premade messages, where your players essentially fill in the blanks, ensures that no sensitive or offensive information is traded, meaning you can spend less time moderating in-game messages. An added benefit of this approach is that the text can be localised to many languages ahead of time, meaning no matter the country they're from, your players can still communicate with each other.

To get started, we need a message to read. Writing a message can be cut down into smaller chunks, finding possible combinations, allowing the player to select their combination, and dealing with that selection accordingly. First, we need to have those combinations to begin with, and to do this, we'll be using a Text variable. We need a place where we can store all the possible words for our system.

We're dealing with static data, so we'll be using a Data Asset. To create one, we need to tell it what we want it to contain. To do this, press the green Add/Import button on the top left-hand side of your content browser. In the menu that opens up, select Blueprint Class to open the Pick



➤ **Figure 1: Pick Parent Class shows many helpful classes you can create Blueprint derivatives from. We need PrimaryDataAsset, pictured here.**



◀ With our completed system, players will be able to create simple messages by choosing actions and items from a pop-up menu.

Parent Class widget. In the search box under All Classes, enter Primary Data Asset and select the PrimaryDataAsset, then the green Select button to create it (see **Figure 1**). Once it's created, double-click it to open.

With the PrimaryDataAsset child created and opened, we need to add our Text Array variable. You can do this by clicking the + next to Variables on the left of the asset window, selecting your new variable, and setting the Variable Type to Text (see **Figure 2**). Once this is set, if you click the icon to the right of the variable type, you can set it to Array to create the Text Array variable.

Two things to note before we move on. First, there are two different methods we can use with our Text Array variables: we could have multiple PrimaryDataAsset children with a single array in each of them, or one larger PrimaryDataAsset with all the arrays we need inside that one child. Both are acceptable solutions with their own pros and cons.

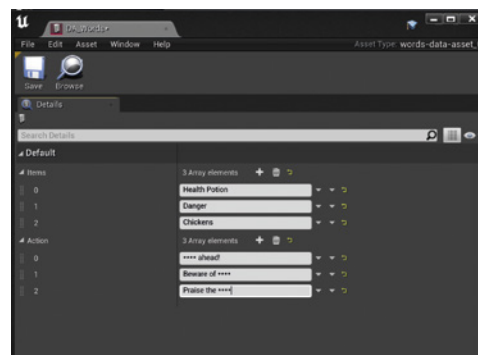
The 'multiple arrays in one PrimaryDataAsset' approach, while acceptable for a small team, could become a technical nightmare to use and maintain by a larger studio. For the sake of simplicity, though, we'll put the arrays in one PrimaryDataAsset, as this won't affect what we're trying to achieve here. We'll need two arrays, so add the missing one now. To make things easier for us, we should name these Text arrays. Name the first one 'Action' and the second one 'Items'.

We've added the relevant variables, so we can now make our Data Asset. Compile, save, and close the PrimaryDataAsset window. Right-click an empty space in your content browser and select Miscellaneous > Data Asset from the

drop-down menu that shows up. Depending on what your PrimaryDataAsset was named, select it in the Pick Data Asset Class window that shows up and press Select to create a Data Asset. Once created, double-click it to open it up.

We can now use the two arrays to fill in the words we need to test our system. Some examples are listed below, but feel free to come up with your own. Note that in the actions list, the four asterisks are important, as they're going to be used to place the item with the action. Add these to the arrays in your created Data Asset by pressing the plus next to the array name (**Figure 3**).

Actions	
****	ahead!
Beware of	****
Praise the	****
Items	
Health	potion
Danger	
Chickens	

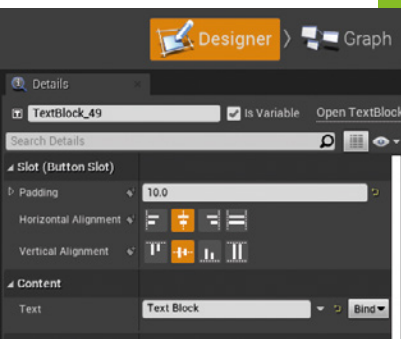


^ **Figure 2:** The icon next to a variable allows you to turn it into many different things, from a plain variable to an array or map. We're choosing 'Array'. Note we've also renamed the Variable Name from its default.

◀ **Figure 3:** This is what your Data Asset should look like. If you're missing an array or items, check you've followed this guide closely before continuing.

### HOME AND ARRAY

An array is a collection of a specific variable type. You can think of it as a list of variables as opposed to entering each variable (of the same type) one by one. These can be very handy for large amounts of data, but it is important to remember, the bigger the array, the longer it will take to sort through/use.



▲ **Figure 4:** You can adjust details in your Text Block such as the font and padding size to add your own visual flair.

▼ **Figure 5:** The Blueprint in your Button widget should look like this.

Once you've added the above Action and Items into your arrays, save and close the Data Asset to continue. We're now going to need three UMG widgets: one to write a message, a button to use in the widgets, and a simple widget to display the created message.

We'll make the three widgets now, and fill them out shortly. To do this, go to the Add/Import button in the main editor view, and click User Interface > Widget Blueprint. We'll start by editing the Button widget, as the other widgets depend on it. Double-click your Button Widget Blueprint to open it.

Head to the Designer tab (on the top right-hand side of the window) and look for the Widget Hierarchy – it should just have a Canvas Panel in it at the moment. Because this is a button, we need everything to be inside its clickable space, so delete the Canvas Panel, then find a 'Button' in the Palette. Click and drag it to the place where the Canvas Panel was in the Hierarchy before it was deleted.

Now that you know how to add things to your widget, find a 'Text' widget in your Palette, and drop it into your Button. Next, click Text in the Hierarchy as we need to alter some details to make it work the way we want it to. With the button selected, go to the Details panel. This is usually found on the right of your screen – go to the top of the Details panel and make sure the 'Is Variable' checkbox is ticked (see **Figure 4**). We should also ensure the text has room to breathe, so in the padding sub-menu

(under the Slot section) remove all the text and type '10.0' to give the text added space around the corners of the button.

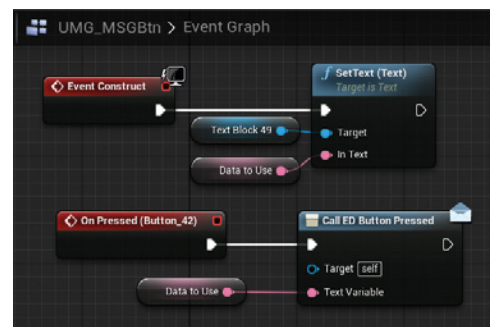
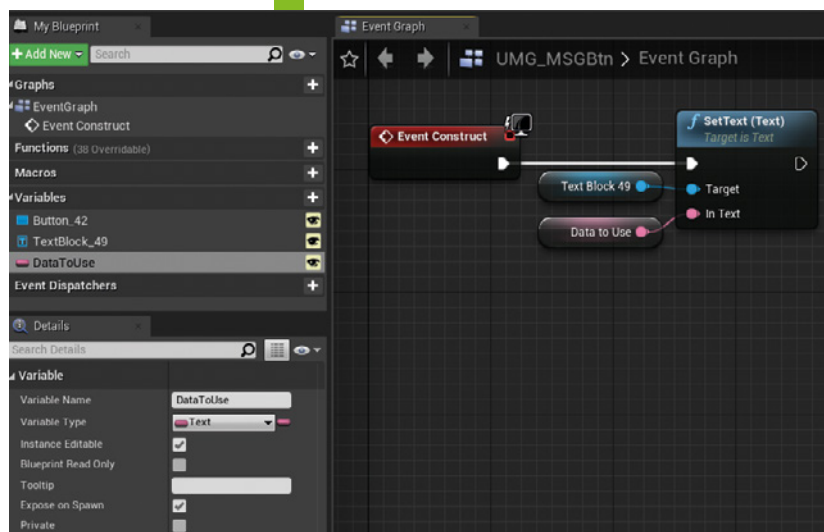
Now we've set up this widget, we need to add some functionality. Press the Graph button to move to the Blueprint editor.

There are four things to do in the Graph editor. First, create a Text variable. To do this, find the Variables section, as we did for the PrimaryDataAsset, and create the Text variable – the key difference being that this time, once you've created it, rename it to 'DataToUse', then check the Details panel and make sure Instance Editable and Exposed on Spawn are both set to true. This is so when we create the widget, we can set the variable's value.

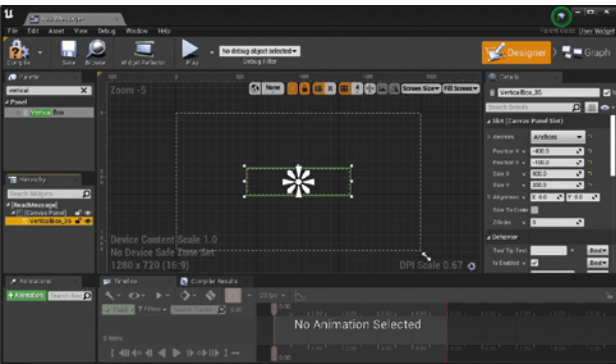
Next, we need to drag our Text Block variable and place it on the Blueprint graph. When asked, select Get, and from the output pin of the created node, drag it to an empty space in the graph. When the pop-up menu appears, select Set Text (Text) and connect the leftmost white input pin to the output pin of Event Construct. Drag in your DataToUse variable and place it into an empty space, selecting Get, and connect the output pin of that node to the InText section of the SetText (see **Figure 5**).

The third thing to do is create an Event Dispatcher so that when a button's pressed, we'll broadcast to players: 'This button was pressed; here's the data you need'. To set this up, go to the Variables area again, look under the Event Dispatchers section, and click the + to create a new Event Dispatcher.

Rename your NewEventDispatcher\_0 to ED\_ButtonPressed, then in the Details panel, click the + next to Inputs and set it to a Text variable, as this is the data we want to broadcast. Finally, click the Button variable in the Variables area.



▲ **Figure 6:** Your finished Button Widget Blueprint.



▲ Figure 7: Our completed Read Message widget.

Once selected, scroll down the Details panel to the green On Pressed button. Click it to create an event that will trigger when the button's clicked.

Now click your Event Dispatcher and drag it into the Blueprint, selecting Call when asked, and hook it to the created event. For the Text variable, drag in our Text variable again, and plug it into the input (see Figure 6). Once this is done, we're finished in the Widget Blueprint, so compile, save, and close it down.

We've now created our Widget Blueprint for the button and can move on to the other two widgets: 'WriteMessage' and 'ReadMessage'. After that, we need to make a small Blueprint to confirm everything works, and we'll have a working system.

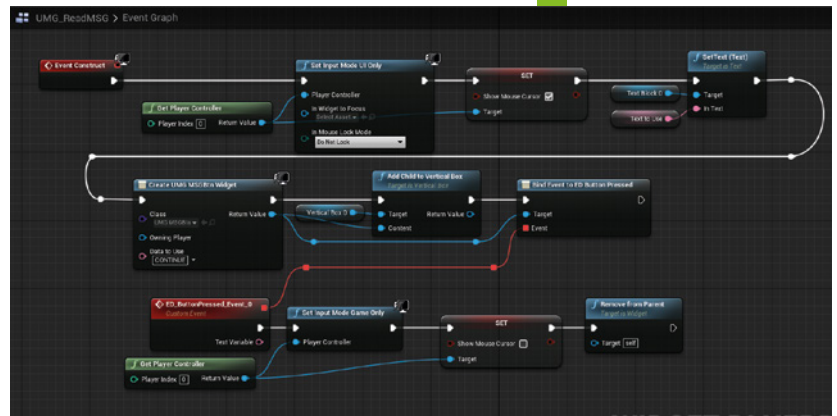
Using what we learned when we created the Button widget, open up the widget you created for reading the messages (if you didn't, create it now and open it). This time, we'll be leaving the Canvas Panel in, as we want it to correctly scale on the screen. Add a Vertical Box from the Palette as a child of the Canvas Panel. We want this vertical box to be centred on the screen, so click it, head into the Details panel, and click the Anchors drop-down. Select the option where the grey square's small and in the middle to centre the box (see Figure 7).

Before we continue, make sure you set the VerticalBox to Is Variable. Once that's done, set up the position and size – here are the best settings:

```
Position X: -400
Position Y: -100
Size X: 800
Size Y: 200
```

Within this VerticalBox, add Text and Spacer widgets from the Palette menu (you can type the Text and Spacer names in the search box to find them more quickly). Select the Spacer, and in the Details panel, set the size to Fill so that our

**“Now we've set up this widget, we need to add some functionality”**



▲ Figure 8: The finished read message Blueprint. Note that some extra nodes (Set Input Mode Game Only, for example) have also been added for debug purposes.

content fills the whole VerticalBox. Select the text, and in the Details panel, set Is Variable to true. You can also go to the Appearance section in the Details panel and set the Justification to the centre icon if you'd prefer the text to be centred.

Now we can head into the Graph and, as we did last time, create a Text variable, set it to Instance Editable and Exposed on Spawn. Drag this variable into the Blueprint area, select 'Get' when asked, and add the Text Block variable in as well. Again, drag from the output pin of the Text Block and add a 'SetText (Text)' function, hooking the input execution pin to Event Construct and the Text variable into the In Text pin.

We're missing the button, so we can create that by clicking in an empty space, typing in 'create widget' in the search bar, and selecting the Create Widget button. Click the drop-down on the Class node to select the Button widget we made, and type 'CONTINUE' into the Data to Use input pin. Once both those options have been set up, drag the Vertical Box variable into the Blueprint area and 'get' it. Drag the output pin of the created variable into empty space and create an Add Child to Vertical Box function. Hook the execution pins in the chain together (Set Text's output should connect into Create Widget. The output of Create Widget should be attached to Add Child to Vertical Box) and drag the return value of the Create Button widget node to the Content input of the Add Child to Vertical Box node.

Once that's done, we need to know when the button's pressed, so drag the return value from the Create Widget node once again and drop it in an open space. When the pop-out menu appears, type Assign and select Assign EDButtonPressed (or whatever you named your Event Dispatcher). Hook the input pin of the function into the

## OPTIMISE PRIME

One future optimisation would be to replace the text array with a Map variable that has the 'Key' set to int (or string) and the 'Value' set to Text, allowing for less overhead when sending and receiving messages by using the int or string to look up the data faster (and using fewer resources) than sifting through an array to find the data.

# Toolbox

Make a Dark Souls-style messaging system

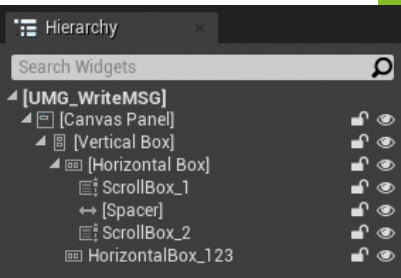
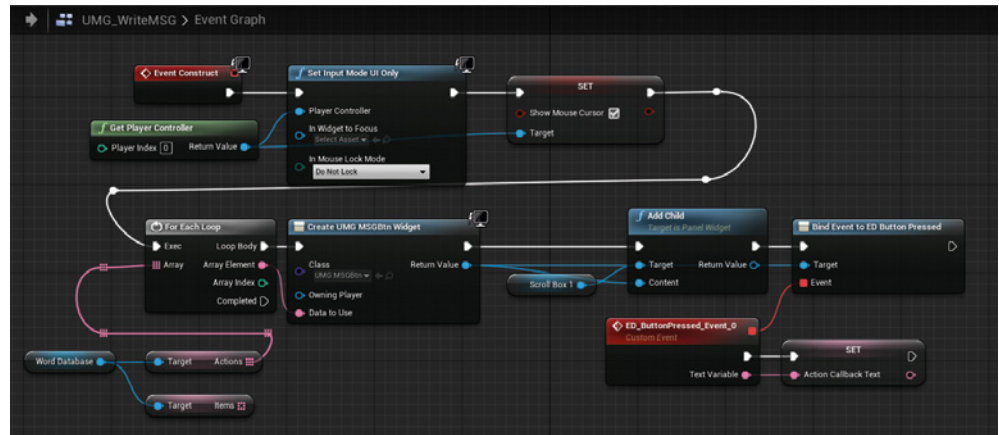


Figure 9: The widget designer for the Write Message widget.

Figure 10: An example of what your Write Message code should look like so far.



output pin of the Add Child vertical box. Now it's all hooked in, the connected event will trigger when the button's pressed. We then need to remove this widget from the screen, so click the output execution pin of the ED\_ButtonPressed Event, drag it into an empty space, and create a Remove from Parent node (Figure 8). The final widget to tackle is the one for writing messages, so open this up now – or create one if you haven't already. Add a Vertical Box to the Canvas Panel, centre it, and set the following dimensions:

Position X: -600

Position Y: -375

Size X: 1200

Size Y: 750

Add a Horizontal Box as a child of the Vertical Box, then a ScrollBox, a Spacer, and another ScrollBox as children of the Horizontal Box. Set these three items to Fill. Make sure the ScrollBoxes have their Is Variable set to true. In the Vertical Box, add

**“You should be able to create your message and press Save to view it”**

another Horizontal Box (also set to Is Variable) – see Figure 9 for how this should look.

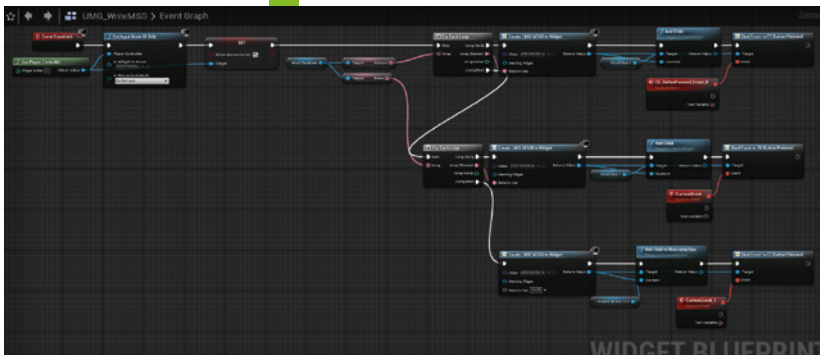
Head into the Graph editor and create a new variable. For variable type, set it to the name of the PrimaryDataAsset we created earlier. Compile the Blueprint, then head back into the variable and set the default value to the name of the Data Asset we created earlier. Drag the variable into the Blueprint,

‘Get’ it, and from the output pin, drag it into an empty space to get our two arrays (‘Get Actions’ and ‘Get Items’) from the Word Database.

We need to cycle through the arrays with a For Each Loop node, so create one by right-clicking in an empty space on the Blueprint, and hook it up to the Actions array (which we set up when we created the Data Asset). Next, from the For Each Loop output pin, make a Create Widget node, set the class to our Button widget, and feed the text output of the For Each Loop (marked Array Element) into the text input. Bring in the ScrollBox variable (use the left-hand side ScrollBox) and from the output pin, create an Add Child node and hook it into the Create Widget. Connect the Return Value to the blue input of the node and then create the Assign node again from the Create Widget's Return Value pin. The Blueprint should look like Figure 10. Duplicate everything between the For Each Loop and Bind Event node (using **Ctrl+C** and **Ctrl+V**) and connect the input of the second For Each Loop to the Completed output of the first For Each Loop. Connect up the Items array to the second For Each Loop and replace the ScrollBox variable with the other ScrollBox.

From the Completed output on the second For Each Loop, grab your Horizontal Box, create

Figure 11: We're almost done with this Blueprint. By now, you should have an understanding of how to let the user pick their sentence.

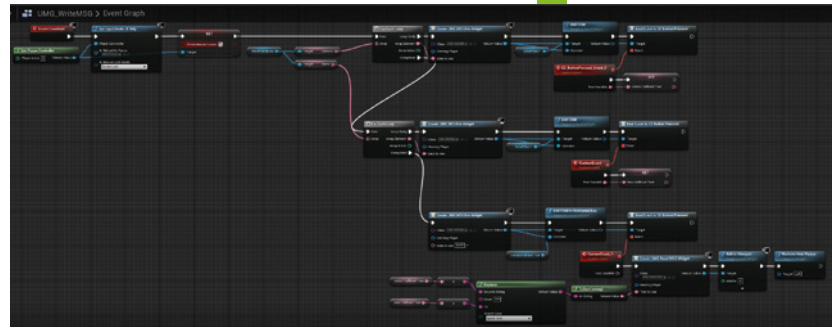


another widget, and this time for the Text input, type 'SAVE'. Add this as a child to your Horizontal Box (**Figure 11**). We're almost finished, but now we'll deal with saving the proper final text so that it can be displayed properly.

We need to deal with each of the three events we've created in slightly different ways. For both of the Arrays event callbacks, right-click the Text output on the Event and Promote to Variable. Name them something you'll remember, such as ActionCallbackText and ItemCallbackText (you can do this in the Details panel on the right). For the last Event, we want to get both of these variables and convert them to a string. This can be done by bringing the variables in, dragging from the output pin into empty space, and searching for 'ToString (Text)'. From the created string outputs, find the Action output, drag it into an empty space, and find the Replace function.

Within the Replace function, enter '\*\*\*\*' in the 'From' box (as that's the text we use as a placeholder when making our names) and plug the ItemCallbackText into the 'To' section. Our text is now correctly formatted and ready to use.

Let's confirm it all works. Make a new Create Widget node, this time using the Read Message widget we created. Add an 'Add to Viewport' node using the Return Value pin and feed in the string output into the Text Entry field of the Create Widget node. Finally, as the widget's no longer required, in an empty space, right-click and create a 'Remove From' Parent node. Connect everything up and this widget is completed (see **Figure 12** to see how it should look). Compile, save, and close it.



▲ **Figure 12:** The final Blueprint for the Write Message widget.

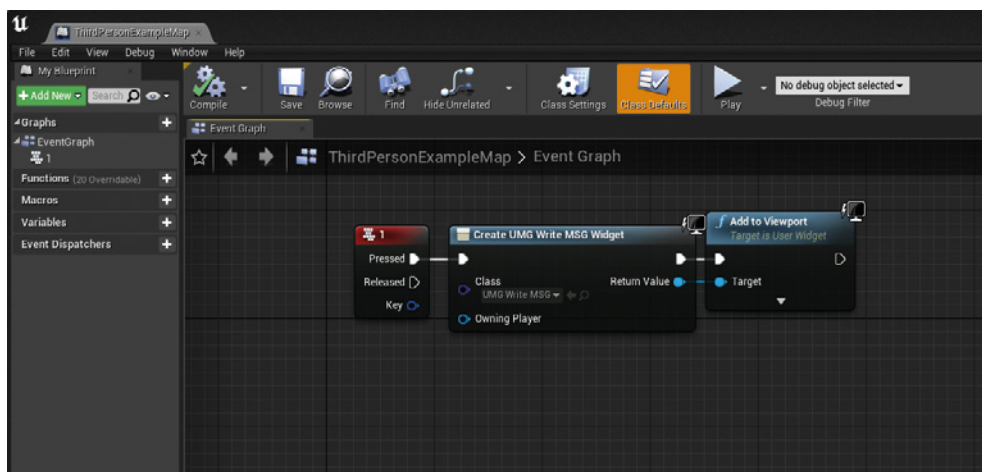
To test everything, head into the Level Blueprint by going to the main editor view, click Blueprints, and select Open Level Blueprint. Right-click in an empty space, type 1, and select the Keyboard Event for 1. On the Pressed output, Create Widget and feed in the Write Message class, then add it to the viewport – see **Figure 13**.

And you're done! If you play now and press 1, you should be able to create your message, and press Save to immediately view your creation. The next steps here would be to create another event dispatcher that saves the message and the location (hint: using Get Actor Location connected to Get Player Pawn gets the world location). The next steps would be to send the data to a server and download it for the player to enjoy, but you should now have a decent understanding of UMG, communication between UMGs and Text variables.

If you'd like an idea of how to expand system, see our example project on Github ([wfmag.cc/wfmag59](https://github.com/wfmag/UMG_WriteMSG)), which writes the generated text to the walls. The code's been placed in UMG\_WriteMSG, but would be better served in its own actor Blueprint using everything you've learnt here. 🙌

## EDITING WIDGETS

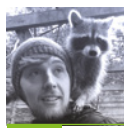
You may notice when editing your Button widget that everything looks incorrectly scaled. This doesn't matter as it isn't taking its final dimensions into account, but if this bothers you, press the Fill Screen button on the top right-hand side of your Widget Designer viewport, and you can change the option to Desired.



◀ **Figure 13:** How the Level Blueprint should look.

# Ghost of Tsushima's DLC masterclass

Antony discovers that Sucker Punch's biggest hit saves the best for last with its Iki Island expansion



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**T**he original release of *Ghost of Tsushima* was a triumph in many ways. From a narrative design point of view, it was the most well-considered entry in the modern open-world action-adventure genre. Its discoverable map activities were things like composing haiku, which gave us insights into our character Jin Sakai's temperament and allowed for player expression, and taking baths in hot springs, which both increased his maximum health and provided a relaxed moment for him to express his thoughts on various subjects.

Despite this, I feel like I got to know Jin Sakai far more in our few hours on *Iki Island*, an expansion added with the *Director's Cut*, than in the entire original campaign. I'm being slightly reductive here, but his character back in Tsushima was thus: 'stern, thoughtful samurai, hard childhood'. We explored the game's supporting characters in satisfying detail, but Jin suffered from blandness due to his unwavering stoic heroism. Even his decision near the start of the story to break the

samurai's bushido honour code, and be willing to assassinate enemies, felt more like a necessity of the genre's gameplay than an expression of Jin as an individual, especially since he never defends this position convincingly when challenged.

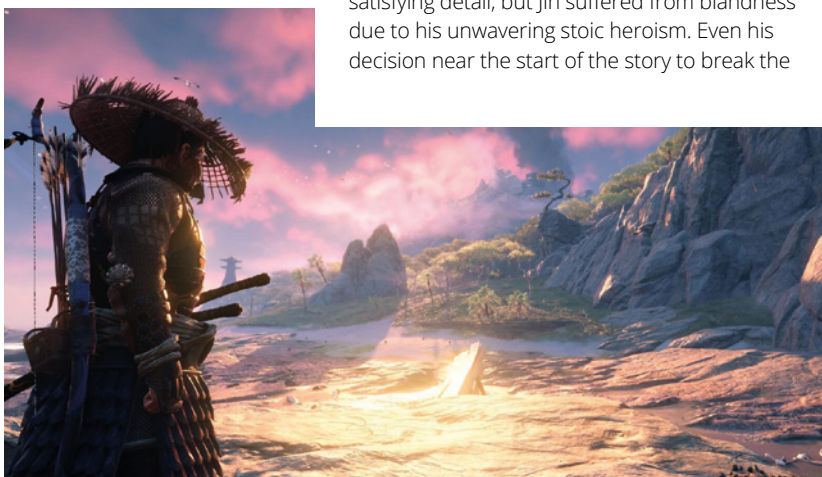
## ARE WE THE BADDIES?

Furthermore, one of the most popular criticisms levelled at the game's original release was for its veneration of the samurai. In *Ghost of Tsushima* the samurai can be inflexible or uppity, yes, but the fact that they were historically a mostly hereditary class with a licence to kill, and were often atrocious warlords, is completely sidestepped. All characters (except the baddies) are happy and deferent in the presence of a samurai, who are undoubtedly depicted as the rightful rulers of Tsushima.

But it seems the developers took this on board, as on Iki, there is no love for the samurai. Jin has been there before, it turns out, as a child on one of his father's campaigns. The senior Sakai, while adhering to bushido, nevertheless butchered the local populace, branding any who defied him as 'raiders' much the way that modern oppressive regimes abuse the labels 'terrorist' and 'insurgent', using them to justify brutal executions. To the game's credit, it takes Jin quite some time to stop seeing the resistant people of Iki as 'mised', or merely criminal 'raiders', and understand his father and samurai-ness for the deeply flawed things they are.

That said, the expansion generally reasserts the samurai myth. Jin reaches a new state of mind, one in which samurai-ness is no longer a dogmatic code or birthright, but instead it's how Jin chooses to express his deeper-held beliefs that

▼ *Tsushima's Iki Island* expansion feels like a direct response to the criticism (and praise) levelled at the rest of the game.







▲ *Fallout: New Vegas' Honest Hearts* expansion introduced Joshua Graham, who quickly became one of the whole series' most discussed and memorable characters.

he must stand up for what his heart tells him is right and be a defender of the people. Artistically, it's saying that being a samurai (or warrior, more generally) doesn't necessarily mean one is good, so 'goodness' must come first while the world still needs 'good warriors'.

## IT'S PERSONAL

All of this is more than just an ethical position. On Iki Island, by forcing Jin to struggle with his samurai-ness, he's made to delineate himself against that heritage; he becomes an individual. This is further enhanced by other narrative design innovations which bring us closer to the protagonist. For example, in Tsushima, a type of location you encounter on your travels are the Inari shrines, to which you are led by playful, pettable foxes. When you reach one, Jin silently gives a prayer, and the game moves on. But on Iki, these are replaced by animal sanctuaries featuring cats, deer, and monkeys at which Jin lingers while you play a flute minigame and he recalls his late mother teaching him respect for nature and music. It's a big improvement: in addition to a lovely open-world location and interaction, you're also learning more about Jin and perhaps what has made him different from other, more warlike, samurai.

Finally, the *Iki Island* expansion also thrusts us into Jin's inner world more literally, using the trope of the 'Enemy Within'. Soon after reaching the shore, the antagonist forces Jin to drink a psychoactive poison, which semi-permanently destabilises his mind. This conceit allows a hallucination of the antagonist to actively haunt Jin, exposing and jabbing at his emotional



▲ *Batman: the hallucinatory villain conceit hasn't been this well used since Arkham Knight.*

weaknesses. It also means that Jin is frequently thrust into visions of his hopes and fears: a dead farmer's body on the side of the road is more than just an indicator of the Mongol occupation, it becomes a hallucination of Jin's father's corpse whispering a damning line once uttered by the late Lord Sakai. By the time we leave Iki, we know Jin intimately.

I came away feeling that *Iki* was the best of *Ghost*, and it dawned on me that this feeling was familiar. *The Lost Chapters* was my favourite part of *Fable*, so too *Left Behind* with *The Last of Us*, and *Burial at Sea* with *BioShock Infinite*. Thanks to their shorter run times and tighter focus, each of these expansions hit harder, proportionally, than the original product. But they also benefited from a mechanical maturation which gave us *Iki Island's* animal sanctuaries and *The Lost Chapters'* alignment-based spells and more interesting enemy design. Not only that, thanks to lower production stakes after the 'big ticket' launch has

**“Each of these expansions hit harder than the original product”**

passed, we get more adventurous stories and points of view being explored, such as the parallel reality shenanigans as Elizabeth in *Burial at Sea* and the queer representation in *Left Behind*. So DLCs, expansions, and 'expandalones' such as *Marvel's Spider-Man: Miles Morales* offer developers a step back from the pressures of risk-averse triple-A production, while still benefiting from that experience, and allow designs to be enriched by the think pieces and huge swathes of player data which have followed since launch. In short: long live the expansion pack. 🗣️

## GHOST OF ARKHAM

The toxin-induced hallucinations Jin experiences on Iki Island are particularly reminiscent of those found across Rocksteady's *Batman: Arkham* games, particularly in that hallucinations aren't restricted to scripted sequences. Joker, or in Jin's case 'the Eagle', can appear and undermine the player mid-fight, or as you zipline up a random Gotham building, or as you stop to behold an Iki sunrise. It's the true potential of this narrative device: no matter how off-piste, the player is at the mercy of story and character development.

# How we create the perfect concept art for games

The UK's Atomhawk Studio shares its process for turning game ideas into unique visuals



**AUTHOR**  
**THE ATOMHAWK TEAM**

Based in the UK and Canada, Atomhawk partners with the games industry to deliver ideas from concept to completion.

**A**t Atomhawk, we have over a decade's experience as concept artists in both video games and films. Our work can be seen in such triple-A titles as *Mortal Kombat*, *FIFA*, and *Call of Duty*, while our team of artists work on concept and production art at all stages of game projects, from characters, environment, and weapon design, to animation, UI, and box art.

We caught up with three members of our senior team – lead artist Charlie Bowater, lead interactive designer Dan Gilmore, and principal

concept artist Dario Jelušić – to explain how we work and provide insights into the process of creating concept art for games and movies.

### PROBLEM-SOLVERS

As concept artists, our job is to be visual problem-solvers: interpreting what our client needs and providing a body of work that helps shape their project from an idea to a finished product.

We start all projects by talking with our clients, either in person or via video call. "Having a chat with a client can be helpful, as they sometimes share details that aren't in the brief," says

▼ *Age of Empires II: Definitive Edition* style exploration (courtesy of Xbox Games Studios).





▲ **Mortal Kombat 11 roster**  
(courtesy of NetherRealm Studios).

Charlie Bowater. “Sometimes the brief will be very [specific], but with others, we’ll have more creative freedom. The sweet spot is where a client gives you enough detail to go on, but also the freedom to do what you do.”

These chats nearly always present a spark or an idea to start exploring the style and mood of a game so we can begin creating visualisations. Projects can be a long journey, and every client must have the confidence that the ideas we provide are to benefit and enhance their final game.

## SETTING THE MOOD

Once we’ve established our client’s needs, we start brainstorming the style and tone of the project. These early sketches – or mood pieces – don’t provide a lot of detail. But as Dan Gilmore explains, “a mood piece gets across what the feeling [of a game] is supposed to be like. A visual can show what the game will look like in a finished product.” These mood pieces help clients visualise what they want for their project. Once a client has a better feel for the style, it helps us understand the focus and direction of what will come next.

Creating the right team for a project is the next step. At Atomhawk, our artists have a wide range of skill sets, specialisations, and unique life experiences. We always want to use these skills, looking at what elements of the project our artists are best suited to. As Gilmore points out, “some people are good at getting polished pieces done fast, some are better at early sketches. Others are good at architecture or

machinery. It’s really important that the artists we assign are passionate about that particular project – if you’re working on something for a long time and you don’t particularly like it, that can be a challenge.”

While it can be a challenge to create concepts of trees when your niche is weapons, we also look at these moments as an opportunity, as Bowater points out. “Openness and willingness to try new things is really important,” he says. “You won’t always be working on something that’s your cup of tea – concept art covers a broad spectrum. Even if something isn’t a challenge, you have to think about what you can get out of it.”

When shaping project ideas, we develop three: one that’s safe, one that’s safe but with a twist, and one that’s more out-there and spicy. The safe idea is a concept that sticks as rigidly as possible

to the brief and is a key stage of development.

As Gilmore says: “It’s important that you show [the client] you can get to the result they need

before they have the confidence in you to do something that’s out there and wild.”

When creating the safe idea, we draft something outside the box before scaling back. This helps, as Dario Jelušić explains: “It’s easier to rein something in, rather than starting with something close to the brief. When showing these ideas, we sometimes find when a client sees it, we’ve given them something they haven’t thought about and they end up liking our wild card designs.”

Creating different idea profiles gives us the chance to inject more of our own style and ➔

**“It’s easier to rein something in than start close to the brief”**

▼ **Training artwork by Damian Audino.**



# Toolbox

How we create the perfect concept art for games



▲ The Atomhawk team (and their collection of round tables) in their Gateshead offices.

flair into a project. As Bowater says, rather than focusing on the finished product, we want to show the process of how we got there: “People are hesitant to put development work in portfolios, but the steps and process show your thinking and how you got to the end design.” For Gilmore, this development stage can be the most rewarding, especially when a client loves a design you’ve produced.

“It’s really gratifying for the artist if they injected their own ideas and styles, and the client responds well to it,” he says.

We always want to show that we understand the assignment and can provide the right concepts that fit clients’ needs.

## SHAPES AND ICONS

No matter what element of a game we’re working on, the starting point is always shapes and silhouettes. Shape language is integral to any concept piece, as this can help find the game’s tone. “It’s all harmonious,” Bowater explains.

“The style of the game will be reflected in the characters and that will be reflected in the world.”

Gilmore agrees: “We talk about the readability of a character, where you recognise them in a line-up just by silhouette, like Mario and Sonic.”

The other thing to consider is functionality: an asset looks cool, but does it work? Whether it’s a character, vehicle, or weapon, the concept design needs to fit in the project’s world and function

▼ Artist Ani Larmina getting started on some quick thumbnail sketches.



**“We always pull references from our own interests and creative libraries”**

within that universe. Creating a practical element to ideas and designs allows the client to visualise the end product. A good example of this is in fantasy MMOs, as Jelušić points out. “You have a group of characters – a leader, a paladin, a bruiser, a healer – and all have rules and clichés,” he says. “A healer will have a staff that is iconic,

but as a concept artist, you want to be able to push elements like these and make something original. We want to see how we can maintain

clichés, to make them recognisable from a distance, but still original.”

When working on pre-existing or recognisable properties, we have to take into account their rules and lore. “You have to be careful,” Jelušić says. “Everyone likes Batman, and there’s a lot to go off, so it can be easy. But it can be tough to stay true to the character. You want to have those key character points all checked before you start to push and change things.”

Gilmore uses a more British hero as an example. “Take James Bond,” he says. “Originally, he was a suave ladykiller, [but] with Daniel Craig, he’s all about the grit and the action. This only happened because pop culture like the *Austin Powers* films started mocking the stereotype. As artists, we look at the qualities and traits of an IP before we see what we want to lean into and start changing.”

Above all, storytelling is key, whether creating a character, vehicle, weapon, or landscape. Everything we do as artists serves the story, because we’re part of shaping that game’s universe. As Jelušić explains, “stories are the oldest way people communicate. When we’re creating, that’s always in our mind. What makes that character special? Where are they coming from and what are their main traits? Sometimes we’re given that story, sometimes we have just a few details, giving us room to explore and think about a character’s background. We push the envelope with our concepts so they’re not just cool but also anchored within the game’s narrative.”

Along with the story comes styling, with both elements combining to create a game’s narrative. Clients usually give us references to understand the look they’re going for. Sometimes, the style’s already been decided by the studio; at other times, establishing a style is part of the



creative process. In each instance, we always pull references from our own interests and creative libraries. From movies and TV to music or literature, we use our experience to create the best concepts for each project.

We can work on a project quite far into development before a set style's been decided. In these situations, we use a mix of client references and style exploration, something we experienced in Microsoft's *Project Spark*. "Microsoft needed an art style to fuse all elements of the game into one product," Gilmore says. "We did a lot of exploration to see what the pillars of that style were. One of these pillars was to make the game feel hand-sculpted and carved."

"From road textures to grass and trees, we often do style explorations, whether for characters or environments," adds Bowater. "The concepts we provided were very in-depth and included many elements, but the project was really fun."

It's also worth looking at current styles, advises Gilmore. "The other interesting thing is where you see trends become popular," he says. "At the moment, it's the *Spider-Verse* style, and you see projects reflecting that. How do we take that style and make it fit for each client? How do we then make that style unique to their project?"

Once we've finished concepts and provided them to the client, this may not be the end of the project. Creating concepts is a dynamic process of continuous refinements: ideas will evolve with some inevitably discarded during the creative process. This is all part of the journey, shaping the final product that you see in-game. As Bowater says, the key here is to never be precious: "You can adapt ideas to make them

work in the end, but the concept is usually the start point. Things are watered down along the way, and sometimes the client doesn't like where the idea ends up."

Understanding the concept team's place in the process helps. "It's important to know the pipeline and that we are just one part of it," says Jelušić. "We have storytellers who create the characters before we come in and design them. The designs then have to be functioning, so it's always good to talk with teams like the 3D guys and see what's possible. That communication is important as it helps you know the limitations of a project. Knowing the parameters of each project helps us push things as much as possible – it's much easier to cut down a concept than push new ideas later on."

## THE ESSENCE OF LIFE

As artists for hire, we all want to keep our skills sharp, and develop new styles – which is where personal projects come in handy. "I'm always working on personal projects, and almost all day I'm drawing and taking inspiration from the essence of life," says Jelušić. "It may be a certain hue of the night sky, and replicating that colour in my personal work, making sure people understand it and see the sky when they look at that colour. I also want to convey emotion – when a character is sad, for example. I want to nail that pose so people go 'Wow!' Even though something is on the canvas, I take that essence of life and put it into the piece."

Bowater agrees. "Most of my inspiration comes from outside of art. I look at real-life experiences, travelling, movies... Oh, and *Sailor Moon*. If I can get that into a project in some way, I'm happy!" 🐼

^ Atomhawk artist Mauro Cerati celebrated Halloween by producing this striking piece of artwork.

♥ StudioQuest is a six-part video series about concept art, made in conjunction with ArtStation. Here's a bit of key art made for it.



# How to become a user researcher

Start a career making games better with user research. Steve has all the details



**AUTHOR**  
**STEVE BROMLEY**

Steve Bromley is a user researcher who's worked in games for over a decade. He's also written a book on the subject: *How To Be A Games User Researcher*. [gamesuserresearch.com](http://gamesuserresearch.com)

**G**ames user researchers run structured playtests that allow teams to iterate and make games better. They combine UX (user experience) and scientific best practice to organise and run reliable studies to understand player behaviour. Although it's a reasonably new discipline, it's had a huge impact on the games industry over the last decade, by giving developers access to reliable data about how players experience their games.

From interviewing the most hardcore MOBA players, to watching children set up augmented reality (AR) games in their living rooms, the typical day of a user researcher is hugely varied and is a fun and rewarding career. Here, we'll look at what skills someone needs to become a games user researcher, how to develop those skills, and how to find industry opportunities.

Games user researchers run studies throughout game development. From the earliest prototype, it's possible to answer questions such as 'Do players understand this?', 'What's stopping this being fun?', and 'Can players do what we expect them to do?'. But timing these studies

correctly can be quite difficult. Run them too early, and there's nothing yet there to test. Leave it too late, and the development team may have moved on to new priorities and won't be able to fix the issues uncovered in playtests.

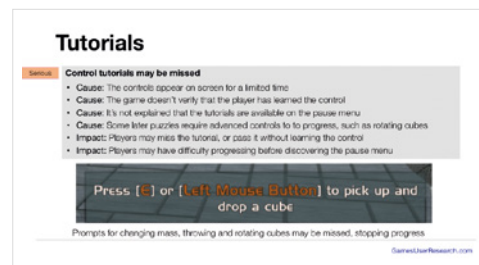
This requires user researchers to understand how games get made, and when they should be running playtests to have the most impact. Early in development, working closely with game designers on the core loop helps ensure the game is fun. Later on, they work with artists, level designers, programmers, sound engineers, and others to make sure their work is being experienced correctly.

Understanding how games get made and what each discipline does allows researchers to plan impactful playtests and get the results to the right people. Because games user research is reasonably new, teams often request playtests too late – researchers need to be proactive and go out of their way to make studies happen at the right time.

There are a lot of ways that people develop these skills. Some user researchers have previously worked on indie development teams or on mod teams. Others have experience in other games disciplines, like production or QA, or have read books like *The Art of Game Design*. Time spent learning how other disciplines work will allow researchers to be more effective.

Reliable playtests are scientific experiments, and require a scientific approach. Researchers follow a repeatable process of:

- Understanding what the team needs to know
- Deciding what the right method is to answer their questions



► Researchers discover usability and accessibility issues before the game launches.



◀ Games user researchers select the right method for what their teams need to know.

- Collecting data from players
- Analysing and synthesising the findings to create conclusions

Researchers work hard to do this in a robust way that is free of bias, and creates 'safe' conclusions that teams trust. This usually means that games user researchers have a scientific background – many games user researchers have postgraduate degrees in social sciences.

This teaches them how to define and 'screen' people to find the right kind of player, how to craft non-leading tasks for players, and how to collect and handle a large amount of qualitative and quantitative data. The communication skills required to interact with players are just as useful when condensing and sharing results with colleagues, so that game designers listen when we present our findings.

Although most researchers have developed experimental design skills through academic experience, this isn't the only way to do it. Other avenues include gathering playtest experience through a design or production role, or learning on the job as a junior member of the team.

## STARTING A CAREER

After deciding on a career planning and running playtests professionally, it can be difficult to get the first role. The discipline is reasonably new, so only the largest studios take on junior user researchers. Look for roles at large developers and publishers such as Microsoft, Ubisoft, or PlayStation, as they're more likely to hire user researchers at a junior level. Mobile dev teams, who've been exposed to user research through

experience of app design processes, can also be a great place to develop early research skills.

Because there are limited opportunities, competition for jobs can be fierce. Stand out through personal projects – by working with indie teams to run, say, games user research studies. Working as a user researcher in other industries, such as web or app design, can also provide experience of designing and running experiments and influencing designers. At interviews, showcasing your experience understanding game development, and ability to design unbiased and accurate research studies will be key. The secret weapon for job applicants is the community. Jobs boards, such as [@GamesURJobs](#) on Twitter or the How to be Games User Researcher newsletter, will help spot opportunities when they come up, and the games user research community is an open and inclusive group ready to help give guidance and help new people join the industry.

Games user research has exploded over the last decade, and is still growing. If you have an analytical mind, love games, and enjoy spending time with players – this is the career for you! 🎮



◀ New hardware can require games user researchers to go out into the field to gather usability feedback.

Source Code

# Code an explosive homage to Bomb Jack



AUTHOR  
MARK VANSTONE

Help Jack collect the bombs in a remake of the arcade hit

In 1984, a new hero flew into arcades. Developed by Tehkan (later Tecmo), *Bomb Jack* saw its caped protagonist leap around platforms, collecting bombs while avoiding the patrolling enemies. Jack gained extra points for collecting bombs with burning fuses, and once the screen was cleared, it was onto the next globe-trotting location. *Bomb Jack* was soon ported to home computers, and received several sequels and re-releases, including one for the Nintendo Switch.

For our Python remake, we'll focus on the unique way Jack moves around the screen. He can jump very high and float back down, while his cape can be used to guide him left and right and glide at a slower pace. Using Pygame Zero, we'll start with the Egyptian background from the original game and then add some platforms over the top. We'll use a different image for each

platform and create an Actor for each one. We can put these Actors in a list, which will make it easier to check for collisions later. We also make an Actor for Jack and add a couple of extra properties so that we can track his direction and thrust. Once this is done, we can create Actors for our bombs. We define a list of coordinates to represent the position of each bomb, and then loop through that list creating a bomb Actor in each location and then adding the Actor to a list of bombs.

Our `draw()` function will first draw the background followed by the platforms (from the platform list we created earlier), then the bombs from the bomb list, and then Jack. We can also add the score at the top of the screen. You'll see that the bomb Actors also have a property called 'state', which we'll use later when checking to see if Jack has collected them or not. A `gameState` variable can also be set when all the bombs have been collected to trigger the display of a message saying that the level has been completed.

In our `update()` function, we'll handle Jack's movement. We can assume that Jack is facing forward to start with, and then we can adjust his direction depending on what keys are being pressed or if he's jumping up or floating down. We need to do two collision checks because we don't want Jack to jump up through the bottom of a platform, but at the same time, we want him to land on top of a platform if he's falling down. If there are no collisions, then we increase Jack's Y coordinate to simulate gravity, and to counter that, subtract any thrust value that should be applied. The thrust value is reduced each update until it gets to zero. If the left or right keys are pressed and Jack's falling, we move his X coordinate accordingly and give him a



Collect all the bombs in our homage to Bomb Jack.

little boost upwards to stop him falling so quickly. If he's on a platform, we display animation frames to make him run left or right. We capture the jump key press in the `on_key_down()` function and make the thrust property equal to 20, which will send Jack up in the air.

The other part of the `update()` function checks the state of the bombs. We run through the list of bombs, checking to see if Jack has collided with them. If he has, we set the bomb state to a value higher than 1. This sets off an animation cycle through a few frames until the bomb disappears. In this loop, we count how many bombs have reached the invisible state – when that number reaches the total number of bombs, we set `gameState` to 1 and the level is completed.

To expand the project, you could put in some baddies, and don't forget that lit bomb fuses can give Jack a bonus if he collects them while they're fizzing. As ever, we'll leave those for you to add. ☺



Each of Bomb Jack's levels had different backgrounds and platform layouts to keep things fresh.



Download  
the code  
from GitHub:  
[wfmag.cc/  
wfmag59](https://wfmag.cc/wfmag59)

# Bomb Jack in Python

Here's Mark's code for a *Bomb Jack*-style platformer. To get it working on your system, you'll first need to install Pygame Zero. Full instructions can be found at [wfmag.cc/pgzero](https://wfmag.cc/pgzero).

```
# Bomb Jack
import pgzrun
WIDTH = 600
HEIGHT = 650
jack = Actor('jackf', (300, 300))
ground = Actor('ground', (300, 640))
roof = Actor('roof', (300, 61))
platform1 = Actor('platform1', (400, 180))
platform2 = Actor('platform2', (420, 580))
platform3 = Actor('platform3', (320, 440))
platform4 = Actor('platform4', (180, 250))
platform5 = Actor('platform5', (120, 510))
platformList =
[roof, ground, platform1, platform2, platform3, platform4, platform5]
jack.thrust = gameState = count = frame = score = 0
jack.dir = "l"
bombs = []
bombXY = [(110, 95), (170, 95), (230, 95), (430, 95), (490, 95), (550, 95), (40, 290),
(40, 350), (40, 410), (40, 470), (560, 290), (560, 350), (560, 410), (560, 470), (110,
605), (170, 605), (230, 605), (360, 545), (420, 545), (480, 545)]
for b in bombXY:
    bombs.append(Actor('bomb1', center=(b[0], b[1])))
    bombs[len(bombs)-1].state = 1

def draw():
    screen.blit("background", (0, 0))
    for p in platformList: p.draw()
    for b in bombs :
        if b.state > 0 :
            b.image = "bomb"+str(int(b.state))
            b.draw()
    jack.draw()
    screen.draw.text("SCORE:"+str(score), center=(300, 28), owidth=0.5,
ocolor=(255,255,255), color=(255,0,0), fontsize=40)
    if gameState == 1: screen.draw.text("LEVEL CLEARED", center=(300,
300), owidth=0.5, ocolor=(255,255,255), color=(0,255,255), fontsize=50)

def update():
    global count, frame
    if gameState == 0:
        jack.dir = "f"
        ytest = jack.y
        if keyboard.up:
            jack.dir = "u"
        if checkCollisions(platformList, (jack.x, jack.y+(jack.height/2)))
== False : jack.y += 4
        if checkCollisions(platformList, (jack.x, jack.y-32)) == False :
jack.y -= jack.thrust
        jack.thrust = limit(jack.thrust-0.4, 0, 20)
        if jack.y > ytest+1: jack.dir = "d"
```

```
        if jack.y < ytest-1: jack.dir = "u"
        if keyboard.left and jack.x > 40:
            if jack.y != ytest:
                jack.dir = "lf"
                jack.y -= 2
            else:
                jack.dir = "l" + str(frame%2+1)
                jack.x -= 2
        if keyboard.right and jack.x < 560:
            if jack.y != ytest:
                jack.dir = "rf"
                jack.y -= 2
            else:
                jack.dir = "r" + str(frame%2+1)
                jack.x += 2
        jack.image = "jack" + jack.dir
        checkBombs()
        count += 1
        if(count%5 == 0) : frame += 1

def on_key_down(key):
    global gameState
    if gameState == 0:
        if key.name == "UP" and jack.dir == "f":
            jack.thrust = 20
            jack.dir = "u"

def limit(n, minn, maxn):
    return max(min(maxn, n), minn)

def checkCollisions(cList, point):
    for i in range(0, len(cList)):
        if cList[i].collidepoint(point):
            return True
    return False

def checkBombs():
    global gameState, score
    bombsCollected = 0
    for b in bombs:
        if b.state > 1: b.state += 0.4
        if b.state == 0 : bombsCollected += 1
        if b.collidepoint((jack.x, jack.y)) and b.state == 1:
            b.state = 1.4
        if int(b.state) > 4 :
            b.state = 0
            score += 100
        if bombsCollected == len(bombs): gameState = 1

pgzrun.go()
```



# Creating a video game **with Sketch**

Sketch is a tool for UI design, but it can also be used to make games. Here's how RareSloth used it to create King Rabbit



**AUTHOR**  
**BRIAN OPPENLANDER**

Brian loves his family, the outdoors, and coffee. After graduating in Human-Computer Interaction & Design, he met Austin Borden and decided to make a mobile game, then another, before co-founding RareSloth.

I never expected to end up in the video game industry. After graduating, I got a job as an interaction designer for a healthcare company. It didn't take long before I could feel the corporate environment begin to crush my soul, and all I wanted to do was create something of quality that people would love. By chance, I made a friend who was a programmer with similar motivations, Austin Borden. We began to work on games part-time outside of work, which led to us eventually quitting our jobs to pursue indie game development full-time. Thus RareSloth was born.

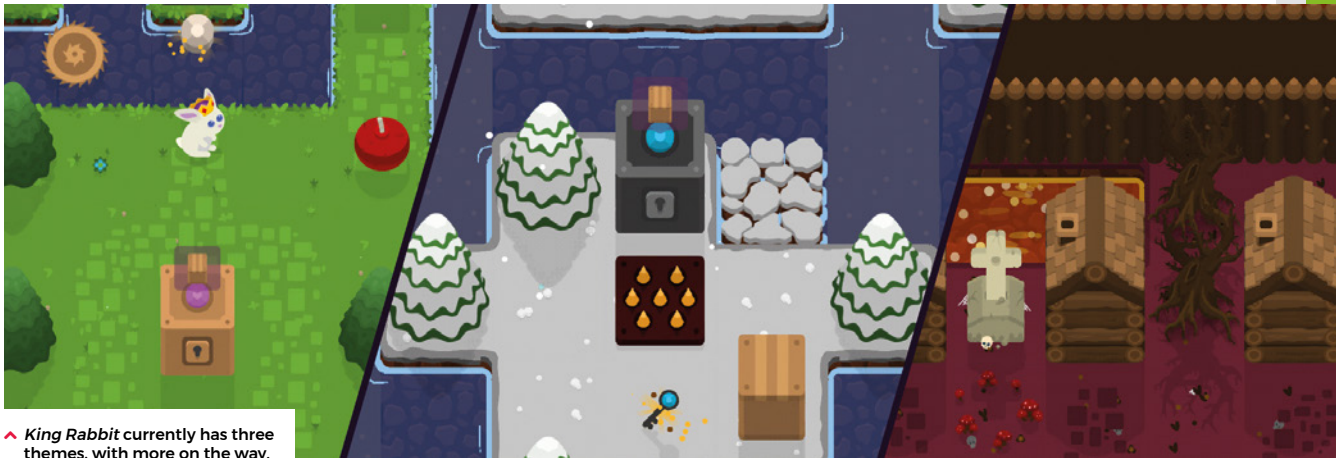
In my previous job, I grew increasingly comfortable using Sketch for design. It's primarily made for making user interfaces, but I quickly discovered that it could also be used to create a variety of game assets. Lacking much in the way of artistic talent, I struggled with Photoshop. Creating vector art was a lot more comfortable and also helped me stick to

a consistent style. We were making a top-down puzzle game called *King Rabbit - Puzzle*, which we thought should be clean and readable, and that simple vector style was fitting. A heavily stylised puzzle game can quickly become visually distracting, which can take away from the puzzle experience and overwhelm the senses.

Most 'normal' game artists would use Photoshop or a similar tool to create their assets, but I found that Sketch had some unique features that made it easy to manage the art pipeline. Having everything contained within one piece of software really streamlined things and made assets quickly reusable. There was less context switching, and less time fumbling with multiple programs. Having everything (Colours, Styles, Symbols, UI elements, and so on) in one place works well for a small team.

We made a character creation template using Symbols, so while the individual pieces were being created, we could see a preview in





▲ *King Rabbit* currently has three themes, with more on the way.

different perspectives in real time. If the preview looks good in Sketch, we can assume the art's production-ready. Creating repeating textures is also easy to do with Symbols: make a square Symbol, then arrange nine of them in a 3x3 grid. Next, tweak your Symbol source while watching the edges to ensure your lines join seamlessly, and you're ready to export your texture.

Games require a lot of assets, and there's a constant need to re-export existing assets after additional iterations. Using artboards and naming these with an export path (for example: `rabbit/quetzalcoat/body_side`) makes updating assets quick – no more wasting time digging through directories to find the right export path.

## REUSING ASSETS

'Don't repeat yourself' is a common lesson in programming, and the same applies when creating assets for games. Reusing assets is not only faster, but also helps you maintain visual consistency throughout the game. If I want to create an item that looks like, or should be the same size as, a bomb, I'll type 'c' in Sketch to pull up the Insert window and quickly import similar bomb assets that have already been made.

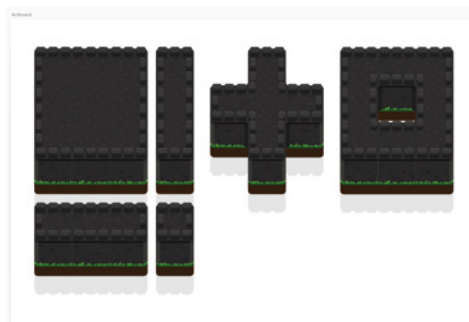
Over-optimisation is a common pitfall in game development that I admit to falling into more than once when creating art – trying to make everything pixel-perfect and consistent can really slow you down and limit you.

For any readers thinking of making their own game art in Sketch, my advice would be to start small and iterate. Scope is a real skill to manage. I follow an expansion and contraction process – in the expansion stage, you allow yourself to be loose and creative. It's usually a

little chaotic. Then in contraction, you go back and get organised again, and tighten things up. Then you repeat the process. If you're always in a contraction mode, you may be over-optimising and being too much of a perfectionist.

## EXPANSION

We're creating a new game in the same series called *King Rabbit - Race*. Where *King Rabbit - Puzzle* is about solving puzzles and building levels, *Race* is a multiplayer experience where you compete against other players through obstacle courses. It's a different game with its own target audience, but uses the same art as *Puzzle* – this approach allows us to continue offering novel gaming experiences while growing a library of game assets, which speeds up development time. As the series expands, the need for organisation and collaboration tools also grows. RareSloth itself is growing, and instead of one designer, we now have multiple designers working simultaneously to build the *King Rabbit* universe. There are a number of new features in Sketch to make collaboration easier: Workspaces, Developer Handoff, Prototyping, and Libraries all come in. 🗨



## ABOUT SKETCH

Sketch combines a powerful, native macOS app with shared Workspaces and web-based collaboration tools. It gives designers and their teams everything they need to create, collaborate, and do their best work. Libraries make it easy to sync changes to Components (Symbols, Text Styles, Colour Variables, and Layer Styles) across different designs. With the Insert window and Components view in the Mac app, they're easy to manage, edit, and insert. Apple even provides a great Library for its iOS UI, making it easy to design for the platform.

◀ We use our tileset template for the grounds, walls, and paths.

**GAME**

Martha Is Dead

**DEVELOPER**

LKA

**RELEASE**

24 February 2022

**WEBSITE**

lka.it





## Martha Is Dead

Wireframe's issue 49 cover star, *Martha Is Dead's* a dark period drama set in 1940s Tuscany. It follows Giulia, a young woman grieving for the death of her twin sister – the titular Martha – and trying to uncover exactly how it happened.

During development, Italian studio LKA began using MetaHuman Creator for some key sequences in *Martha Is Dead's* narrative, as creative director Luca Dalco explains. "We first became aware of MetaHuman some way into development... we were able to use the technology in the parts where Giulia speaks directly to

the player, in the foreground," he tells us. "Using MetaHuman this way enabled us to develop a greater sense of empathy for the character."

Using MetaHuman to create those close-up shots of Giulia wasn't without its challenges: the face had to be carefully tweaked to match the model used elsewhere in the game, and it took time to ensure the facial animation looked natural. But Dalco argues that MetaHuman has had a hugely positive impact on *Martha Is Dead's* development, allowing a relatively small, independent

team to create a realistic character on a budget. "Without MetaHuman, we would have had to give up a part of the game that I cared about deeply," Dalco says. "The budget and the amount of internal work required to achieve this wouldn't have been sustainable. We had already built a few characters internally with decent results, but compared to the quality of MetaHuman's models, there's no way around it: the benefits this technology gives us is like having a department of ten people in our small studio working on characters full-time."

# THE NEW NORMAL

The indie developers  
challenging us to rethink our  
conceptions of difficulty

WRITTEN BY  
JON BAILES

Difficulty used to be simple. Some games offered a selection of predefined settings to suit different skill levels; some offered nothing. Many were intentionally punishing – either because they were made for coin-hungry arcade machines, or because they weren't very big, and wouldn't last long if they didn't keep sending you back to the start. Anyone who didn't fancy their arbitrarily defined challenges would have to admit defeat.

As much as gaming has evolved since its primitive beginnings, its conceptions of challenge often still have a foot in the past. Most games are more customisable now, and are at least designed to be finished. But until recently, few have moved beyond traditional difficulty levels to explore how challenge affects our engagement, or consider more effective ways for players to balance their satisfaction. Nor has the larger gaming community fully discarded the implied stigma of taking the 'easy' option or 'cheating'.

Increasingly in the last few years, however, tentative advances have turned into radical rethinks, as developers have dissected the notion of challenge, exploring its value beyond merely measuring prowess. Whether or not these studios make games that are taxing by



▲ You can simply enjoy drawing and colouring in the scenery in *Chicory*, regardless of artistic talent.

## “DIFFICULTY HAS BECOME COMPLEX, AND BETTER FOR IT”

default, they're continually adapting to feedback, exploring the emotional power of difficulty, or posing questions about the flexibility of authored experiences. Difficulty has become complex, and better for it.

### ASSIST LEADER

The poster child for this new wave is undoubtedly 2018's *Celeste*. “The biggest shift for me has been understanding difficulty as unique to everyone who plays a game, rather than something the

designer is carving into stone,” the game's creator, Maddy Thorson, tells us. *Celeste* does offer a prescribed challenge, and a stiff one at that,

designed to flow in tune with the emotional journey of protagonist Madeline as she climbs a mystical mountain while dealing with self-doubt, anxiety, and depression. Yet it also includes an 'assist mode' that allows players to strip away layers of difficulty, say, reducing the game's speed, or making Madeline invincible.

Assist mode was initially a controversial inclusion for Thorson herself. “When it was discussed, I was the team member who was most against it,” she says. “It felt like a betrayal of the precious experience I was designing.” It's easy to understand this reaction, given how much work went into balancing *Celeste*'s difficulty. “First, you need to define what [the] ‘right’ [balance] even means for the level you're building,” Thorson says. With *Celeste*, that meant aligning it with the narrative. “We start by trying to define what ‘problem’ we're solving, then solve it by making the level. From there, it comes down to playtesting to confirm that the player's experience is aligning with our intentions.” ➔



▲ Screens in *Celeste* often appear intimidating, increasing the sense of achievement when you survive them.

## MAKING WAVES

Some developers are replacing the difficulty curve with a difficulty wave. “Difficulty is just one knob we use to elicit an emotional response,” says *Chicory*'s Greg Lobanov. “When the character is going through something, the gameplay gets harder, but near the end maybe it's actually really easy, because you're coasting through a storytelling scene or something.”

“I don't like it when things just get harder,” says *Bonfire Peaks*' Corey Martin. To illustrate this, he compares the original *Tetris*, which simply gets faster, to the undulations of *Tetris Effect*. “They rightly realise it's fun for difficulty to spike, and then give the player a break,” he says.

The issue then was how to account for the variance in ability between potential players. “As we got to the point where we could see how the game’s narrative was resolving,” Thorson says, “and I had seen people of different skill levels play much of the game, it began to feel obvious that the assist mode would be a positive addition if we did it with care.” By that stage, there were already means for players to adjust the difficulty upwards, by chasing tricky collectable strawberries or attempting the tough ‘B-sides’ of each level, so it made sense to offer something in the opposite direction. “Players can pick and choose when to go for that extra challenge and when to ignore it,” says Thorson. “I’ve come to see assist mode as an extension of that, implemented in a more explicit way and covering the lower end of the difficulty spectrum.”

Assist mode was also more efficient to implement than a traditional difficulty select. “We felt the only way to do that well in *Celeste* would be to redesign and retest all of the levels for each difficulty category, which made it an unworkable solution,” Thorson says. “We also chose assists for maximal impact for the player but minimal consequences to the system.”

It’s no surprise, then, that for their next game, *Earthblade*, Thorson and her team are already thinking about flexible difficulty, although it’s not yet clear whether *Earthblade* will have a specific assist mode. “Difficulty is an ever-present consideration for us,” Thorson says. “*Celeste* taught us a lot about difficulty, and we want to carry those lessons forward in whatever way fits best into *Earthblade*.”

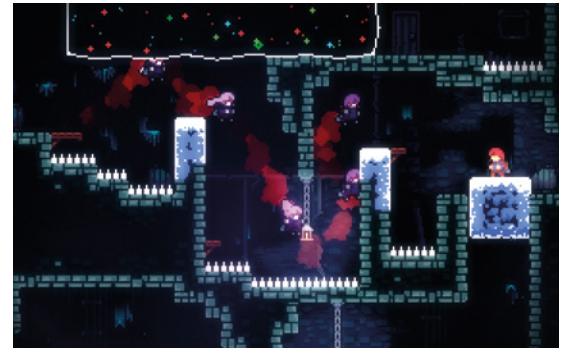
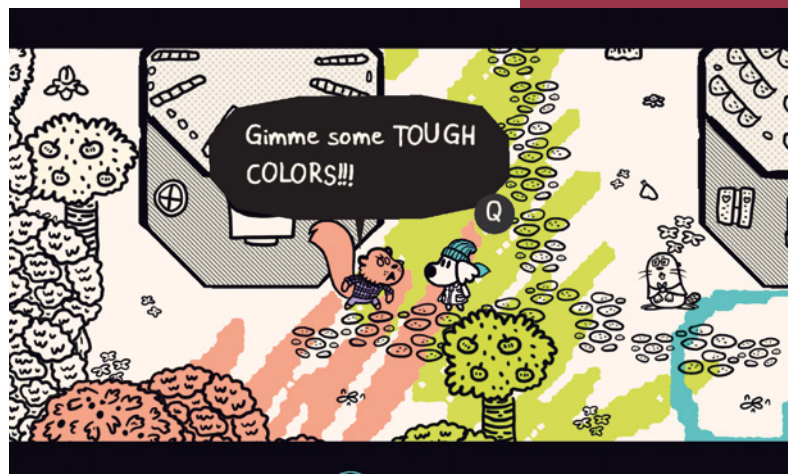


▲ *Celeste* creator Maddy Thorson, in glorious illustrated form.



▲ *Chicory* director Greg Lobanov, in glorious photographic form.

▼ *Chicory* explores issues relating to mental health, emphasising the importance of being kind to yourself.



▲ Conquering *Celeste* Mountain means confronting your inner demons – literally for Madeline, with her Badeline alter ego.

## PARENTAL ADVISORY

More recently, the choice to ‘opt out’ of challenges has been taken further in *Chicory: A Colorful Tale*, which combines assist options with already forgiving design. “It’s fun to make games that force the player to understand your systems,” says Greg Lobanov, *Chicory*’s director. “Then you watch people play your really hard game and it sucks, because they spend most of the time being really frustrated.” This realisation has led him to create games that make people feel good and take what they want from the experience. “Sometimes people just want to know what happens next in the story,” he says.

As with *Celeste*, the crucial factor was linking challenge to *Chicory*’s themes. “It’s a tool we use to create an experience,” Lobanov says, “but it’s not the reason you play the game, right?” In the case of *Chicory*, with story and puzzle elements, plus a focus on artistic expression, flexibility was important. “Some people are playing a *Zelda* game, some are playing *Night in the Woods*, and they’re both here,” he says. “It works for this game because it’s meant to be that.” Just as you can skip every conversation to reach the puzzles, you can equally devote your time to painting the scenery, and get help if you’re stuck.

You can also skip the game’s boss fights, although it took time for Lobanov to come round to the idea. He never intended the bosses to be serious roadblocks – if they knock you down, you get back up and continue without penalty – but they were carefully crafted to provide an “intense experience to feel what the character is going through”. Yet in the laid-back context of the rest of the game, some people didn’t want them at all. “It was only after two years of playtesting and hearing it from more people that I decided I really should think about this,” Lobanov says. “I was resisting the idea because I was really





attached to it. I felt you would miss so much if you didn't see your character going through conflict and struggle."

It turned out, however, that a player's emotional journey wasn't drastically altered by sidestepping these hardships. "I realised that when people skip this stuff, they still get the context of it," Lobanov explains. "Like if you're watching a horror movie, and you close your eyes during the gory parts – it's not like you just didn't know that part of the story. So you're not really missing it, in a sense."

*Chicory* equally demonstrates that assistance needn't feel like an intrusion into the narrative with one of its most memorable features – the option to phone your parents for advice. "I just really wanted your character to have a good relationship with their parents," Lobanov says, "but they ended up playing a bigger role in the overall experience than I was anticipating." The appeal of this feature is both that it's available at all times within the game's fiction, and that asking for help becomes entertaining in itself. "Because everyone uses it that one time they get stuck, it makes everyone like the game way better. I think it was a huge boost to the game."

It was also a relatively painless addition. "I'd just have a text sheet," Lobanov says, "and whenever I added a new screen to the game, I added two lines of text that told you how to get through it." In cases like this, he continues, it's the design philosophy around challenge that

can make implementing assistance options either straightforward or problematic. "The fact that we did this from the beginning made it way easier," he says. "If I had made the entire game and then at the end decided to write hints for everything, that would have been so much harder." Considering difficulty from the start leads to a more coherently integrated whole, and it's a practice Lobanov is keen to continue: "As I'm working on [new] stuff right now, I'm already thinking about how I want to make sure people get through it."

## TALES FROM THE DARK SIDE

At the same time, Lobanov emphasises that "every game's needs are different". For example, he says, if *Chicory* "was only a boss fight game, it would have been a lot harder to give you the option to skip boss fights. Why not just turn the game off at that point?" Indeed, for some games, such as *Darkest Dungeon* and its sequel (currently in Early Access), gruelling misfortune remains key to their identity. These roguelike dungeon crawlers could hardly contrast more with *Chicory* in their tone and demands, and offer no escape from their challenges. Yet their aims are effectively the same, in that both employ challenge in a way that suits the atmosphere they're trying to convey.

"*Darkest Dungeon* is more about being uncompromising than being difficult for difficulty's sake," says Chris Bourassa, the series' creative director. "We want to put players in ▶

"DIFFICULTY IS AN  
EVER-PRESENT  
CONSIDERATION FOR US"

▲ The outcomes of your decisions are often made clear in advance in *Darkest Dungeon II*, but it's impossible to predict everything.

## SOFT OPTION

It's not only indie games that have changed their understanding of difficulty. Extensive options in *The Last of Us Part II*, for example, provide a highly customisable experience without judgement. *Psychonauts 2* includes an invincibility toggle, while *Control* added an extensive assist mode a year after launch, which also offers 'Immortality'. Even the notoriously stubborn FromSoftware seems to have made concessions to its *Souls* formula with *Elden Ring*, offering open-world respite between tougher challenges.



^ One problem for games like *Bonfire Peaks* is that they don't fare well on Twitch. "People feel self-conscious being watched while solving puzzles," says Corey Martin.

## VITAL STATISTICS

Maddy Thorson, Greg Lobanov, and Corey Martin don't know exactly how many players use assistance in their games, although anecdotally, they've had lots of positive feedback. "I definitely think it helped *Celeste* reach a wider audience," Thorson says. One set of statistics has been provided by Remedy Entertainment regarding *Control's* assist mode, however. According to an official blog post, in the six months after the mode was added, 22% of console players and 12% of PC players activated it at least once, with those numbers rising to 32% and 19% among those who completed the game. The most popular options? Immortality and Enhanced Aim Assist.

an uncomfortable decision-making space, then make sure the consequences of their choices are permanent and relevant to the experiences that follow." When the threat of loss and decline is supposed to haunt every unretractable decision, options to drastically reduce the impact of negative consequences would be an anathema.

Inevitably, this approach puts some people off, but Bourassa and design director Tyler Sigman have accepted the consequences. "Our mantra from the start was 'This is not a game for everyone,'" Sigman says. "We make creative and mechanical decisions that we know may alienate some potential players, because we'd rather appeal super-strongly to others." The *Darkest Dungeon* games need players to buy into their philosophy, and, as with many roguelikes, adapt to a different concept of 'winning'. "*Darkest Dungeon* is poker, not chess," Sigman says, "a game of imperfect information and variance that's out of your control – but a skilled player will win more in the long run."

With that, difficulty becomes an ongoing concern, which must be carefully curated to maintain the balance of risk-reward, even after release. "It's a never-ending process," Sigman says. "Balancing in this day and age where you can patch easily is live ops. Find holes and exploits, adjust, repeat." Yet they don't iron out all the wrinkles players might discover. "Overbalancing can result in robbing players of the rewards of their cleverness," he adds. Nor do

they tailor the game only to suit its hardcore players. "We're already finding with *Darkest Dungeon II* that some players breeze through things and other players get impaled on the first challenge," Sigman says. "You don't want to overcorrect for [the most dedicated] then find you made things impossible for 95% of players."

Bourassa and Sigman's philosophy highlights how modern games can evolve over time. With the first game, they eventually added a new play style, 'Radiant Mode', which reduced the grind involved in reaching the end. "*Darkest Dungeon's* mammoth campaign lagged in the

middle," says Bourassa. "We also didn't love the average time to complete the game being anywhere from 60–80 hours – that's a lot." Radiant Mode isn't

## "WE DON'T LIKE TRADITIONAL EASY/NORMAL/HARD SLIDERS"

easier, but it makes progress quicker, which broadens its appeal. This thinking carries across to the sequel, whose *Slay the Spire*-type structure makes it possible to see an ending relatively quickly without smoothing out the bumps. "We definitely wanted to explore a shorter game loop," says Bourassa, "but we're also excited at the spikiness we can introduce, given each run is an independent experience."

As with the first game, *Darkest Dungeon II* will develop further, but will never truly compromise. "We don't like traditional easy/normal/hard sliders," says Sigman, "but we do like to include options that can make the game more enjoyable for different people without sacrificing what makes *Darkest Dungeon* unique."



## SOFT PEAKS

Constant recalibration isn't the only way modern delivery systems can help designers deal with the problems of difficulty. Corey Martin is a purveyor of taxing puzzle games, most recently *Bonfire Peaks*, in which a man works his way through screens full of cunningly arranged blocks to burn his belongings. Martin is conscientious about the steepness of the challenge. "Maybe in early games I put too much of a premium on difficulty," he says. "It's very easy to make something very difficult, but will it be interesting at all?"

With *Bonfire Peaks*, Martin explains, the challenge level tended to emerge more naturally: "Ultimately, it's about building out a system. Maybe you have some considerations of how much you want to funnel the player towards the solution, but otherwise, it's just letting the idea decide how difficult it wants to be." Crucially, though, he feels it should never be overwhelming. "That's always been a turn-off for me," Martin says, "not being able to keep all the elements of the puzzle in your head at once, and having a hard time visualising the possibilities."

Still, players will inevitably snag on puzzles in *Bonfire Peaks*, and including traditional difficulty levels or hints wasn't really feasible. One option would be to create a hint system offering, Martin says, "a series of less cryptic clues for each puzzle, so you can decide how far down the chain of hints you want to go", but that would have been a big commitment. "There are a couple of hundred puzzles in the game – that's a lot of hints," he says, "and there's an art to doing it cryptically, but helpfully. And then localisation."

One tried-and-tested concept he turned to was making the game's structure more inviting, placing puzzles in an overworld that allowed players to advance after solving only a handful of screens in each section. "If you have a linear

▲ While it has some similarities to *Zelda*, there's no combat in *Chicory* other than the bosses.



▲ *Darkest Dungeon* design director, Tyler Sigman, wearing a hat.



▲ *Darkest Dungeon* creative director, Chris Bourassa (hatless).



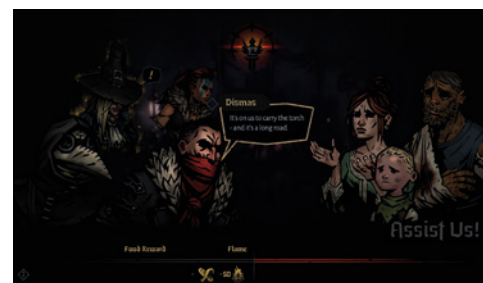
▲ Corey Martin, purveyor of such taxing puzzle games as *Bonfire Peaks*.

puzzle game, like *Portal*," Martin says, "where you know the player is only going to be at B because they finished A and they're not at C yet, you have to really be careful not to challenge too much." In *Bonfire Peaks*, conversely, the difficulty can be more varied. "I hope people feel encouraged to bounce around and walk away from puzzles," Martin says. "I think having the option to try something else alleviates some of the frustration."

If that's not enough, you can take more radical steps, and this is where the new tech comes in, at least if you're a PS5 owner (and PS Plus subscriber). *Bonfire Peaks* makes good use of the system's activity cards, with one for every level containing a video that shows the full solution. "We shared a producer with the team from *Manifold Garden*," Martin says, "and she told us how well-received the hint system was for *Manifold Garden* on PS5. So we thought, 'OK, how do we offer a similar benefit?'" Having these external resources was hugely convenient. "Building out a system from scratch can be prohibitively ambitious," Martin says. "Their system is really streamlined and it was just [a matter of] taking time to record the videos."

If giving away the answers like this seems strange, ultimately it's a measure of progress. People have always looked for help with games, from magazine guides to helplines, and there were solution videos for *Bonfire Peaks* on YouTube soon after launch anyway, with nothing to stop players using them. Why not make it more convenient? Tools like activity cards are yet another way for developers to mould difficulty and assistance around the kinds of experiences they want to create.

And with that, attitudes are changing. "I strongly reject any snobbery about considering any way of playing as cheating or whatever," Martin says. "Every way of playing is valid." 🗣️



▲ The many changes in *Darkest Dungeon II* include a move to 3D, adding more detail to the horror.

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## Interactive / FROGSONG

Developer Brandon Braun talks us through their heartfelt action-RPG, about a frog on a personal mission

Are you a solo developer working on a game you want to share with Wireframe? If you'd like to have your project featured in these pages, get in touch with us at [wfmag.cc/hello](http://wfmag.cc/hello)

▼ Braun favours Clip Studio Paint for creating their art and animation, while the game itself runs in Unity.

**W**e've all played our share of games about rescuing princesses or saving entire fantasy kingdoms from shadowy villains. But what about an adventure where you're fighting to establish your own identity? That's at least part of the premise in *FROGSONG*, an upcoming action-RPG that's as much about the internal struggle of its central character as it is about a larger external quest.

"Chorus is a frog who's trying to fight for the right to be who they are," says the solo developer behind it, Canada's Brandon Braun. "They want to be a warrior, but everyone else just wants them to be a holy scholar like all the other tree frogs. A lot of other frogs have really negative reactions to this – confusion, anger, dismissal – and they have to put up with it all."

Not that *FROGSONG* isn't also a traditional action-RPG in the *Zelda* mould: there's plenty of exploration and combat, as Chorus hones their fighting skills in an effort to join a legendary band of warriors called the Defense Guild. But for Braun, it's the personal story that truly drives *FROGSONG*. "As a non-binary person myself, I find it really important to have non-binary characters in media," Braun tells us. "A lot of mainstream media completely lacks any trans or non-binary characters, and when they are present, they're usually just a side character or don't appear very often. There's no reason at all that the main character can't be non-binary!"

"*FROGSONG* was also largely written at a time when I was discovering my own gender identity. Writing a non-binary character and writing a story about identity and self-love was a very important thing for me to do. The story's themes about fighting to be who you are, struggling to be brave enough to live your truth, and just [being] allowed to be yourself without having to justify [it]... these are all themes that are very personal to me."

The deeper aspects of *FROGSONG*'s story didn't emerge immediately, however: back when Braun first started the project, it was, they say, "a goofy comedy game about a frog that just likes stabbing things" (which, let's face it, is a perfectly solid basis for an action-RPG all by itself). Nor had Braun attempted to make a game of this scale before – although they'd dabbled in the likes of RPG Maker and Clickteam Fusion in school, this is their first true commercial video game.





▲ There's plenty of combat in *FROGSONG*, but accessibility and assist options mean players can tone it down if they just want to enjoy the story.



## SUCCESS ON FROGSTARTER

*FROGSONG*'s Kickstarter, which began in the summer of 2021, raised just shy of C\$30,000. It not only gave Braun the proceeds they needed to finish the project, but also something equally valuable: another means of extending its promotional reach. "Promoting work is one of the hardest parts of being independent," Braun says. "It's such a huge market, and the easier it gets to make a game, the more competitive the market becomes. It's really difficult to stand out among a sea of other incredible projects... *FROGSONG*'s Kickstarter has been one of the most important things to happen to the game... people like big, exciting events. If you say, 'Hey, my game is coming to Kickstarter', people are way more likely to check it out than if you just said, 'Hey, look at my game'."

"Learning how to program and code has been incredibly challenging," Braun concedes. "I'm not a very technically minded person, so it took me a long time to really wrap my head around how to make things work. I've been drawing and telling stories for years, so I'm already pretty confident in my abilities there. But this is the first time I've done any sort of coding."

The project has also changed a fair bit since development began; inspired by *Breath of the Wild*, Braun initially saw

*FROGSONG* as an open-world 3D game, before they sensibly decided to opt for a less labour-intensive, two-dimensional perspective.

Still, Braun has had to design an entire fantasy world for Chorus to hop around in – and it was here that their background in art, animation, and storytelling properly came into play.

"I want to make Salia feel like a real, functioning world full of living creatures," Braun says. "There's a lot of history present in the land – there are ruins all over the place, and mentions of previous civilisations living there. Some of these ruins will play an important role in the story, but most of them don't. I know what every single stone arch and old statue used to be a part of, even if there's no way for a player to know just by playing the game."

Building such a detailed world takes time, of course, and having to fit *FROGSONG* around other work has added another layer of challenge. "For most of *FROGSONG*'s first year of development, I was working a part-time job," Braun explains. "For most of its second

year, I was in college. And then for the first half of its third year, I was working a full-time job. Thankfully, my Kickstarter has allowed me to spend more time on the game, and only work three days a week at my job."

Thanks to that bout of crowdfunding, Braun's deeply personal adventure is gradually hopping towards the finish line.

"*FROGSONG* is very close to being done, and is right on track for an autumn 2022 release," they tell us.

"I still need to finalise all

the chapters of the story, make a few more levels, and program a couple of bosses. I'm hoping to get the game in a fully playable state by the end of summer, so I can have a few months to polish things up and do some important testing."

## "Learning how to program and code has been challenging"



▲ *Steven Universe*, *Adventure Time*, Jeff Smith's *Bone* comics, and the *Drawn To Life* games have all influenced Braun's art style.

## Online Diary

# GITTIN' GUD

Yep, it's the same game twice in a row.  
Rocket League proves the system works.

WRITTEN BY IAN "S5 TOURNAMENT WINNER" DRANSFIELD

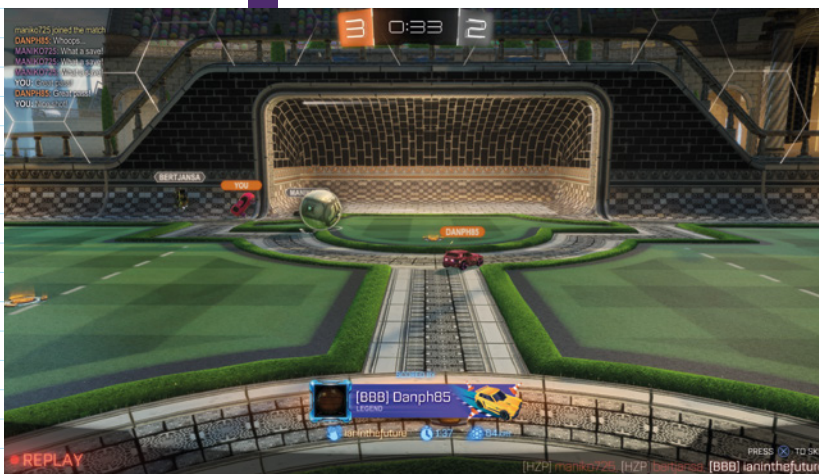
I honestly started out this monthly dive into online gaming with one intention: to find a game I actually wanted to play online, repeatedly, over an extended period. That goal sort of got away from me a bit as I swiftly realised so very many modern online titles don't appeal beyond the odd match here and there, with their mechanics too obtuse, the reaction times required too snappy for these old hands. I never did expect *Rocket League* to emerge from the shadows as the standard-bearer: the only game I got, that I could play OK, and that I would return to repeatedly with a genuine urge to play more, more, more matches.

Early in January, I ended up winning a tournament as part of a three-person team. The specifics of how this came about are messy – I joined a random team with people I didn't know. They did most of the scoring work, while I sat back and played a more cautious game – not something *Rocket League* rewards with many points. Safe to say Psyonix doesn't appreciate people playing its game as a Claude Makélélé-alike. That's a serious failing of the game, by the way, that the midfield game isn't in any way rewarded even though an effective general in the middle of the pitch can dictate the entire flow of play. But I'm not bitter. Much.

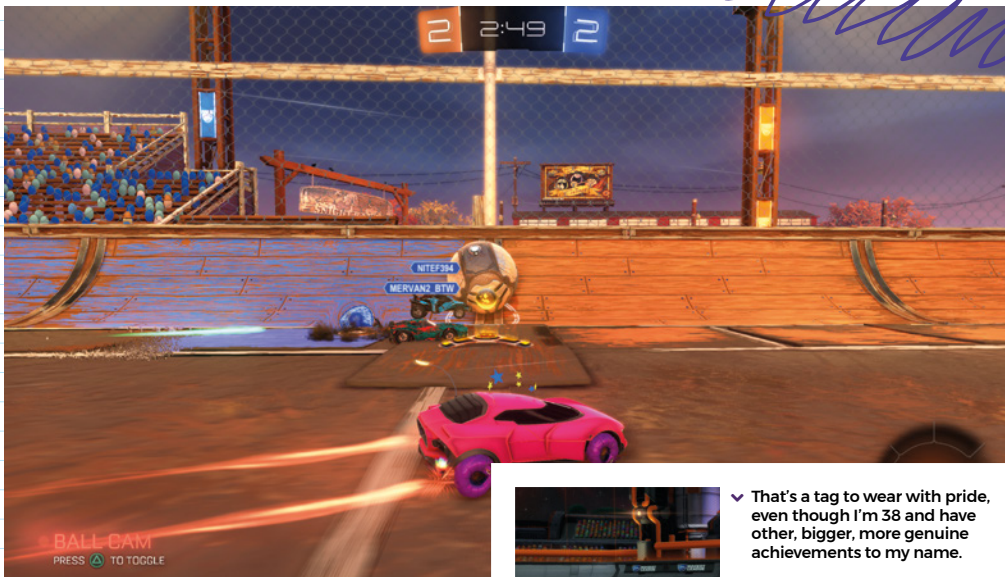
Anyway, the tournament: I didn't contribute much on the actual scoreboard. A few goals, a few assists, a trolling *from my own teammate*, and multiple times where my comrades bagged hundreds of points on the final scoreboard while I landed with a flat 56. But it didn't matter, because while the flashy stuff wasn't on my résumé, cleaning up from the middle third of the field was – and the two obviously Very Online teammates I had were adept at playing an intensely flashy, selfish, and single-minded game of 'put the ball in the goal then troll the opposition and tell them to quit when they're 1-0 down'. Like I say, it was messy.

But by the end of the tournament – something I'd entered to pass ten minutes before walking the dog (it turned into 45 minutes, sorry Amy) – we had genuinely only stumbled once, and given

✓ You can see here this team is playing very well together, as one member passed to the other who scored, then they complimented one another. Big Burly Boys play nicely.







that was the first match in a best-of-three round, it didn't matter. We'd won. I'd got the title of 'S5 Tournament Winner'. At the time of writing my regular teammate in the Big Burly Boys, Dan, absolutely does not have any Season 5 honours under his belt. And I'm certainly not abusing my position here to point out that fact.

This has been such a bewildering display of the power of one game to just *gel* with you on such a profound level. I still feel utterly stupid for having overlooked *Rocket League* for so long – a game so eminently popular could never be something I'd truly be drawn into, could it? Well, that arrogant thought was slapped out of my brainpan quicker than you could scream 'How was that not an assist?!' It's (almost) pure fun from start to finish –

**"I feel stupid for having overlooked Rocket League for so long"**

simple enough to learn quickly, deep enough for tactics and skill to matter, and brief enough that it doesn't have to be a huge time investment to play to a half-decent level.

There are problems, of course – trolling is one thing, abusive comments is another altogether. Report, block, move on is something I'm grateful that I can do here.

Playing with randomers is a negative mark, too, with around 90 percent of matches alongside the anonymous teammates entirely lacking in any forethought or team play. So I'd never recommend you get into the League of Rockets, unless you have at least one other person who can play it with you – it's just not a lot of fun

without those actual compatriots who play *with* you as opposed to entirely for themselves.

Honestly, it's like none of these kids played football at school and had a PE teacher shouting at them for all chasing the ball about like headless chickens. Positioning. Patience. Passing. They all matter, and when things come together in something you could actually recognise as team play – when you *actually manage to pass the ball* and your squadmate scores as a result – well, it doesn't

look quite as spectacular as the twirling aerial boost-headers the extremely talented players score, but it's still a pretty darn good feeling.

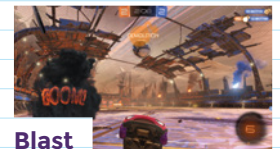
And so there we go: I sign off from Gittin' Gud with the only game that's ever stuck. I'm going to continue playing *Rocket League* – no idea how long for, but there is a genuine desire to keep on punting the ball upfield with a car. Perhaps I'll make it my life's mission to get Psyonix to acknowledge that playing as a defensive midfielder is an important role worthy of earning significant points on your personal scoreboard, but I'm not sure how many of the devs will share my love for Radosław Kałużny or Javier Mascherano. Ah, well. ☹️

**Actual tips**



**Rush**

Don't sit on your backside at kick-off – make sure one player from your team is always rushing forwards to get a touch on the ball. It'll stop the opposition from having a free shot on goal.



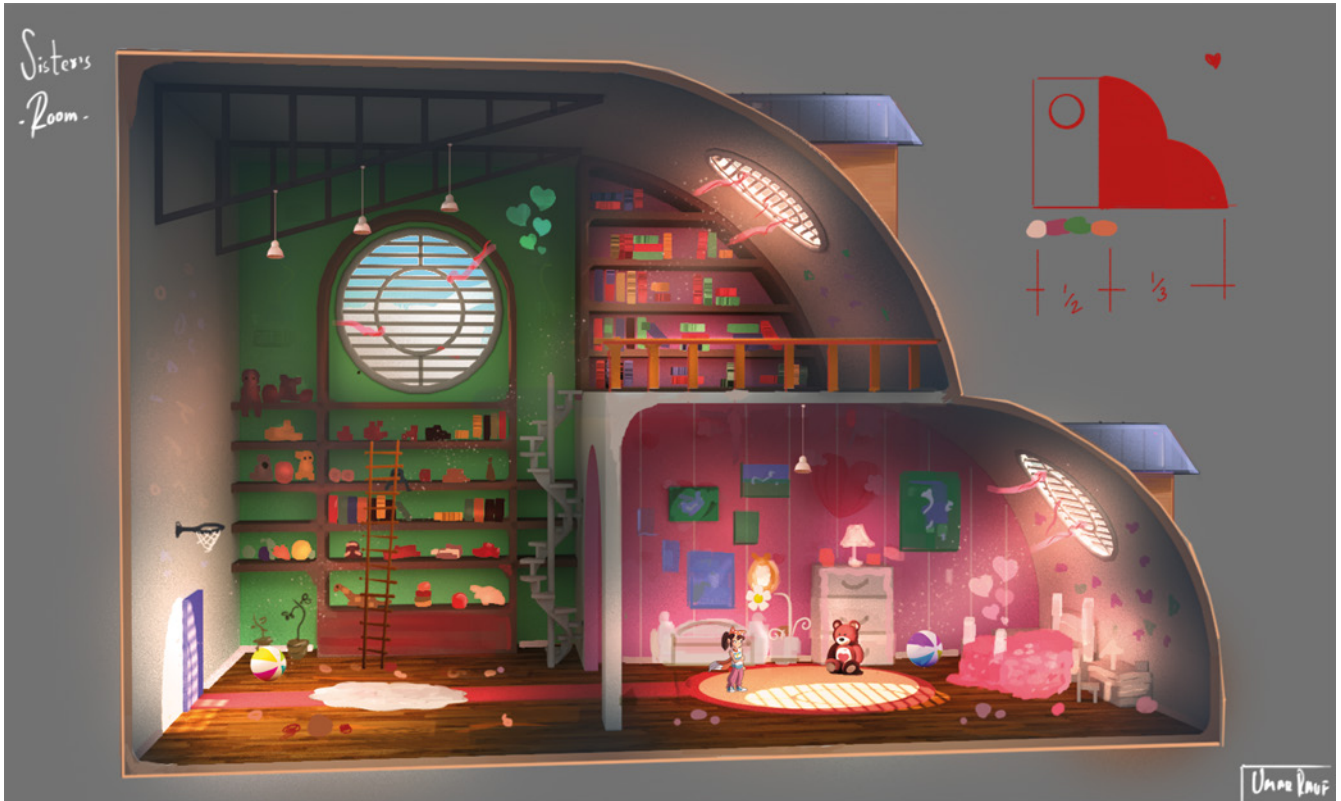
**Blast**

You don't get any points for roughhousing, but do it anyway. Demolishing the opposition stops them from... well, existing for a bit. And general ramming is A-OK.



**Clear**

Defend. Track back. Get into position. Clear the ball. Don't just try and attack all the bloody time, you small-minded, tunnel vision-sporting *idiots*. Ahem. That may be aimed at certain random teammates.

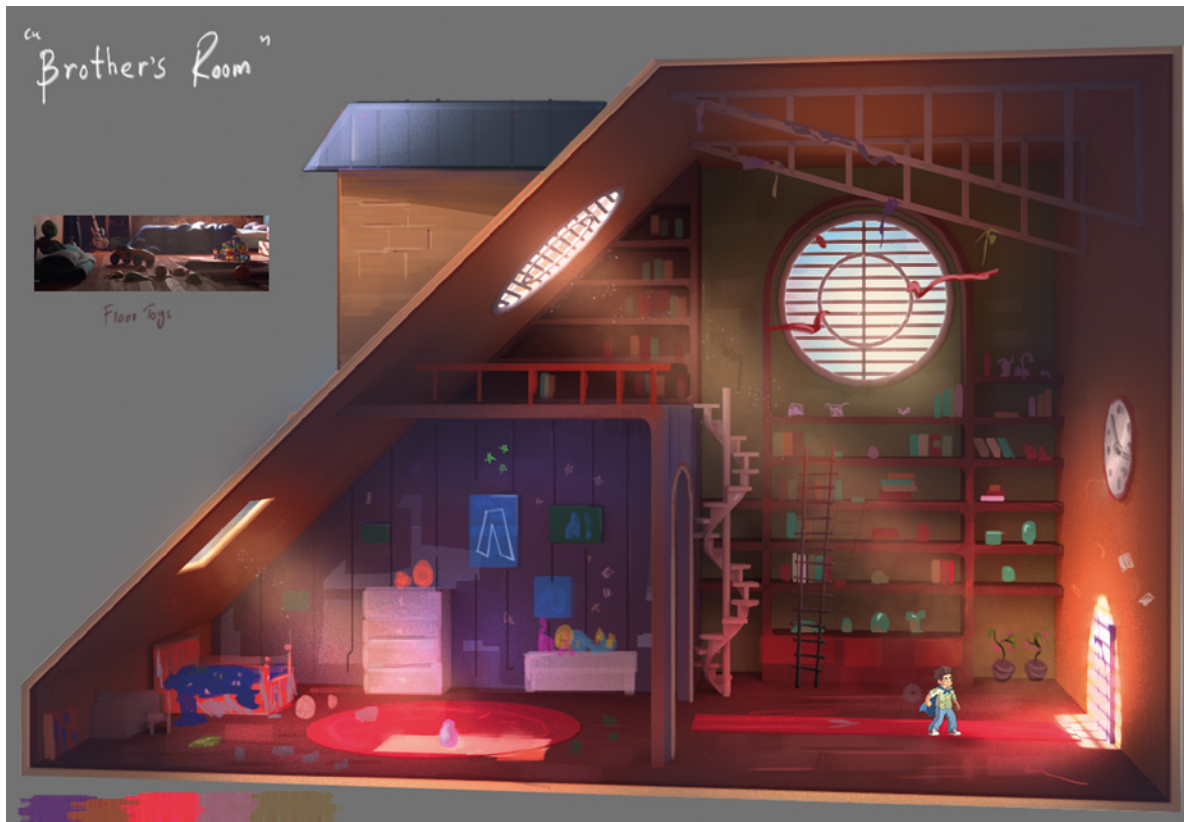


GAME  
Lost Twins 2

DEVELOPER  
Playdew

RELEASE  
2022

WEBSITE  
playdew.com





## Lost Twins 2

**READ  
MORE**  
turn to  
page 14

When it came to creating its relaxing, picturesque platform-puzzler *Lost Twins 2*, developer Playdew looked to the similarly serene animated movies of Studio Ghibli. The result is a game with a playfully surreal tone and some gorgeous hand-drawn characters – a look that took its team time and experimentation to perfect. “The art is all done digitally,” Playdew tells us. “We started by developing mood boards and concept art for the characters and the environments, then we discussed among the team and selected what we thought would best represent the overall mood and feel of the game. The characters are hand-drawn, and all the animations are done in Spine 2D. For environments, we used a mix of hand-painted and procedural textures in Adobe Substance 3D Painter to get a nice, handmade feel. However, the secret sauce to making these environments look nice is planning out the layout of the levels, and adding small flourishes like plants and rocks with little animations to give them a lively feeling.”



### System Profile

# PS2

Sony's stunning sophomore system silenced cynical sceptics

**A**nd just like that, video games changed. With 1994's original PlayStation, that is – Sony's entry to the video game hardware market and a kick up the jacksie the likes of which we wouldn't see anything close to a repeat of until, arguably, the Xbox

360 in 2005. After disrupting the market with such assuredness, such ferocity, upsetting the balance of console power that had held for nearly a decade, and making gaming *cool* and *stuff you did at raves*, and *advertised with drug references*, it's fair to say expectations were high for the PlayStation 2.

First of all, Sony would have to do something about that name. PlayStation 2 made it sound dull and uninspired, so of course the name would be changed. And early designs showed off something that looked like the unholy union betwixt 2001's monolith and a decrepit VCR from 1979, so of course that would be updated to something more sleek and modern for contemporary, turn-of-the-millennium audiences. The controller would definitely see an update, too, as the original DualShock showed itself to be more of a prototype of how this new world of analogue controllers would work – a new design would invoke a





◀ The PS2 was home to some mainstream hits, some genuinely weird contenders, and some of the all-timers like *Shadow of the Colossus*... which obviously was a commercial let-down on release.

new spirit of adventure, as well as just being a bit better sitting in the hands. If Sony stuck to its guns and didn't tweak any of this before the console released, this follow-up would surely be a bit of a damp squib.

Naturally, Sony changed none of that and the PS2 went on to sell 155 million units, more than any other gaming machine in the history of gaming machines. The PS2 was also rough and unfocused in its support of hard drives, which rival Xbox demonstrated could – and would – be incredibly useful in consoles. Sony's machine also made somewhat futile attempts at setting up an online ecosystem of its own, again trailing in the wake of Microsoft's big black box of doom. Not to mention the endless reports of technical issues – so many dodgy disc drives – and the fact

**“It’s fair to say expectations were high for the PlayStation 2”**

that Saddam Hussein was apparently stocking up on PS2s in order to power his WMDs that definitely existed.

When you lay all that out (the Saddam thing was poppycock, by the way, but it was reported at the time), it really does sound like we should be talking about a Gizmondo-style failure, or a

repeat of Sega's Dreamcast – itself finished off by Sony's hyper-aggressive marketing push for the PS2. Instead,

what we got was a weird mishmash of power and promise alongside a general inability to innovate or push boundaries particularly in any meaningful way.

Aside from the requisite specced-up nature of the hardware under the hood, what was it the PS2 did that it could shout about as being particularly new? The controllers were the same, but had pressure-sensitive buttons and came ▶



▲ The PS2 (along with the Dreamcast) proved to be a real turning point when it came to arcade games, with the likes of *Tekken Tag Tournament* being significantly better in its home port.



- ▲ It was genuinely unexpected when *Grand Theft Auto III* hit and changed all of gaming forever – and the game remained a PS2 exclusive for a while.
- It wasn't all new newness on PS2, of course, with established franchises from the previous generation making a successful leap to the fresh one.



- ▲ You'd find 'traditional' ads of course, especially for your *FIFAs* and the like – but Sony really did push a "...huh?" angle with its promotion of the PS2.

in black. Memory cards were memory cards again, but eight times the capacity. You could even use the same SCART lead from your PSone on the PS2. Same again, just with a bit more muscle. Well, a bit more muscle *and a DVD drive*.

And this was how the PS2 got a foothold in the mainstream. On one hand was the marketing – high on spending, aggressive in nature, pushing the console as something everyone in the world wanted. Even the dictator of a Middle Eastern nation, some years before he decided to go on holiday in a hole and grow his beard out. On the other hand, we had the DVD-playing capabilities of the machine, offering up the ability to get into the new generation of home media viewing for far less money than dedicated DVD players of the year 2000.

Contemporary news quoted a survey by Nikkei Online, showing some 74% of



people who bought a PS2 did so both for games *and* to watch DVDs, with a huge 53% buying from one to five DVDs with their console – 30% were renting that many DVDs. A mere 23% avoided DVDs altogether, using the console purely as a gaming machine. It's hard to overstate just how important the PS2's functionality as a DVD player was, really.

It didn't have the looks, or the pure innovation, or even really the great games at launch – *TimeSplitters* was excellent in four-player, but other than that was a middling shooter. But the PS2 had the might of marketing behind it, and one neat trick to tip it over the edge and make it into the product everybody *had* to have. Without that DVD functionality, perhaps the war between Sony and Sega

**“It’s hard to overstate how important the PS2’s DVD player was”**

might not have been over so suddenly a year later. Maybe Microsoft would have finished off a wounded console. The GameCube might not even have had a handle. Who knows?

But it happened like that, and Sony's sophomore system did indeed end up as the highest-selling gaming machine of all

time – shifting more than the Game Boy, the Nintendo DS, the Wii... it's hard to include Sega or Microsoft here

given neither appears in the top-selling lists until the Xbox 360 in ninth place. The PS4 is an ongoing concern for Sony at the time of writing, selling incredibly well – but even that is nearly 40 million units behind its older sibling. The PS2 probably shouldn't have done as well as it did. But it did. And despite it all, it's an absolute gem of a console. 🎮

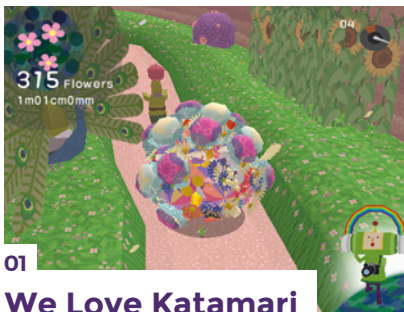
## SYSTEM SHENANIGANS

Sony repeated its trick from the prior generation of releasing a slimmed-down version of the console, with the PS2 slim landing in 2004. But the 75000 series revision, released in 2005, managed to do something rather special: owing to some hardware changes, a decent chunk of PS2 games didn't work on this version of the PS2, with roughly 50 or so titles having issues ranging from mild graphical glitches to outright just not functioning.

The problem was related to Sony shifting from using the original PSone CPU as part of the PS2's design to a new chip. It's too complex to explain fully here, but basically, developers had – as devs do – been creative in their solutions to making certain things work in some games, using the PSone CPU for PS2 games in ways Sony hadn't recommended. When the chip changed, those solutions failed, and a chunk of PS2 games no longer worked on PS2. It was fixed in further revisions, but it was quite the embarrassing snafu for a time.

# 10 PS2 titles never seen elsewhere

The best exclusives that only ever came to PS2



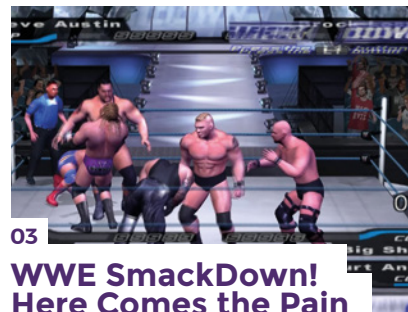
01  
**We Love Katamari**  
2005

Keita Takahashi didn't want to do it, but Namco's work on a follow-up to the original *Katamari Damacy* forced the creator to save his baby from the suits. And what a result: a whimsical, magical take on rolling balls, sticking things to balls, and growing balls. Most bizarrely of all, it was published in Europe by EA.



02  
**Ace Combat: Distant Thunder**  
2001

One of those early generation titles you'd just stare at, *Ace Combat's* fourth entry was always a looker. Handily, it also played like a dream – a mix of arcade-style top gunning and a storyline that, somewhat bizarrely, wasn't utter dross. It was also never ported or re-released, so remains solely on PS2.



03  
**WWE SmackDown! Here Comes the Pain**  
2003

The second-best wrestling game ever made (number one is AKI's *WWF No Mercy*), *Here Comes the Pain* mixed the pageantry of pro wrestling with a deep combat system, making it one of the more technical representations of pretend fights. The series has been downhill since, and *HCTP* is still a PS2-only title.



04  
**Maximo vs. Army of Zin**  
2003

Sequel to *Maximo*, also worthy of a mention here, *Army of Zin* is a 3D action-adventure title that spun out from the *Ghosts 'n Goblins* franchise, and – in its own right – is a lot of daft fun to play through. It was released as a PS2 classic on PS3, but is otherwise unavailable elsewhere.



05  
**Bujingai: Swordmaster**  
2003

Before *Bayonetta* was a thing or *Devil May Cry* really hit its stride, there was *Bujingai*. Rough in parts (ooft, some of that navigation) and sometimes dull, it was nevertheless a creative and rewarding hack-and-slasher that flew under many radars and is still worth a pop today. The game sadly remains very much PS2-only.





06  
**Mr Moskeeto**  
2001

The game that stood alongside *Mad Maestro!* as two of the more prominent examples of 'wacky' titles on PS2, *Mr Moskeeto* tasked you – a mosquito – with drawing blood from a family across a series of levels without being noticed/splatted. It was surprisingly fun, but has stuck (as with its sequel) with PS2 as its only home.



07  
**Gran Turismo 4**  
2004

It's always an event when a *GT* hits on PlayStation, and *GT3* was no different. Oddly, *GT4* was a bit more muted, even though it was the superior game and offered many (*many*) vehicles, improved physics, and even HD (well, 1080i) output. Sequels have followed on later formats, but this was the best version on PS2.



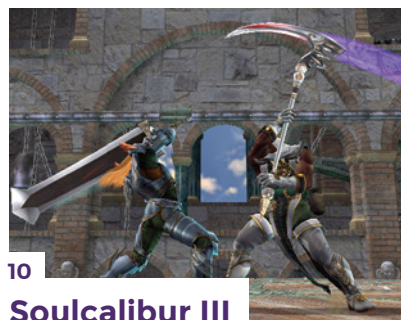
08  
**Klonoa 2: Lunateca's Veil**  
2001

In the chat surrounding great non-*Mario* platformers, you'll often hear *Klonoa 2* come up, and with good cause. 2.5D jumping, enemy-bopping, and puzzle-solving presented with real charisma and charm, it's still a wonderful game. A Wii remake was pitched, but never actually happened, so *Klonoa 2* remains PS2-only.



09  
**Guitar Hero**  
2005

Hard to believe the first *Guitar Hero* was PS2-only, but it was indeed. Starting a megatrend that lasted into the next decade, the original *Guitar Hero* is simplistic by its sequels' standards, but remains a genuinely superb rhythm action title in its own right. Even if all the songs were cover versions.



10  
**Soulcalibur III**  
2005

Sure, *Tekken* was king on PS2 (and featured King), but *Soulcalibur III* is worth a mention just because it feels so overlooked. Another wonderful entry in a superb fighting franchise, the third game deserves another look from series stalwarts. An arcade version does exist, but *SCIII*'s only home incarnation is on PS2.

# Wordle Gummidge



## STEVE MCNEIL

Steve knows that title doesn't make any sense. Maybe some of the letters just need rearranging?

**B**y the time you read this, you'll almost certainly have heard of *Wordle*. Created by Josh Wardle, it offers everyone the chance to solve a single word puzzle each day.

A variant of the recently revived TV show, *Lingo*, which itself owes much to the old plastic peg board game, *Mastermind*, it has captured the public's imagination as a bit of light relief to offset the crushing despair of the other big thing that's been spreading through the country.

Long time readers of this column may be aware of *WiFi Wars*, the show I've developed over the last few years with official tech genius Rob Sedgebeer. The show allows any number of people to compete live (online or in theatres in the 'before times) on games and quizzes beamed in-browser to their phones. I had the idea last week whilst on the toilet of adapting our tech to make a live, competitive version of *Wordle*, and Rob then spent several sleepless days and nights doing precisely that. An even

division of labour between the two of us, I'm sure you'll agree.

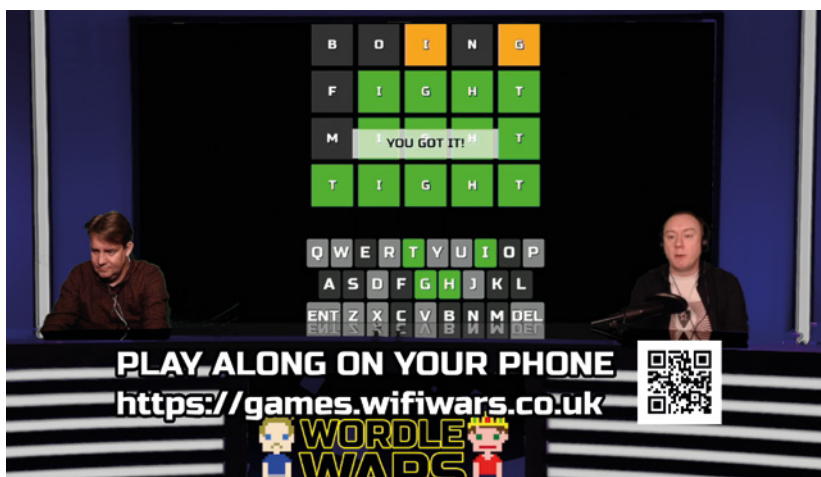
It's been an interesting journey so far. We didn't want to simply replicate what people were used to, so created variants with more or less letters, and more or less guesses, to add variety and allow for multiple difficulty levels. We also added a time limit (as all our games have) and introduced a numerical version, 'Numble'. Rob chose to implement this with a BIDMAS\* rule set, which I hate, but I can't be bothered to learn how to code or do any real work, so for now, we'll all just need to get on board with that.

In truth, our reason for exploring it has less to do with jumping on the *Wordle* wagon, and far more to do with being a timely test case for our broader development plans for 2022. Writing new quiz questions each week can be time-consuming, and playing the same games can begin to feel repetitive for regular viewers. By contrast, *Lingo*, and game shows like it, actually remain as satisfying the 100th time – possibly even more so – and, crucially, have variety baked into them.

Of course, a big part of the appeal of Wardle's *Wordle* is that it is a single puzzle each day. This avoids it consuming large amounts of people's time in the way something addictive like *Candy Crush* might, and allows everyone to enjoy a shared discussion, as the many little coloured squares currently appearing on Twitter prove. Also, by being free and in-browser (rather than requiring the installation of an app), it removes a key barrier to participation.

I guess what I'm saying is that Rob has ruined *Wordle*, and is a BIDMAS pervert, but we've learned a lot, so I'll forgive him. 🙏

\* An acronym that explains the order of mathematical operations: Brackets, Indices, Division, Multiplication, Addition, Subtraction. This means  $2 + 4 \times 3 = 14$ , not 18. Which I hate.

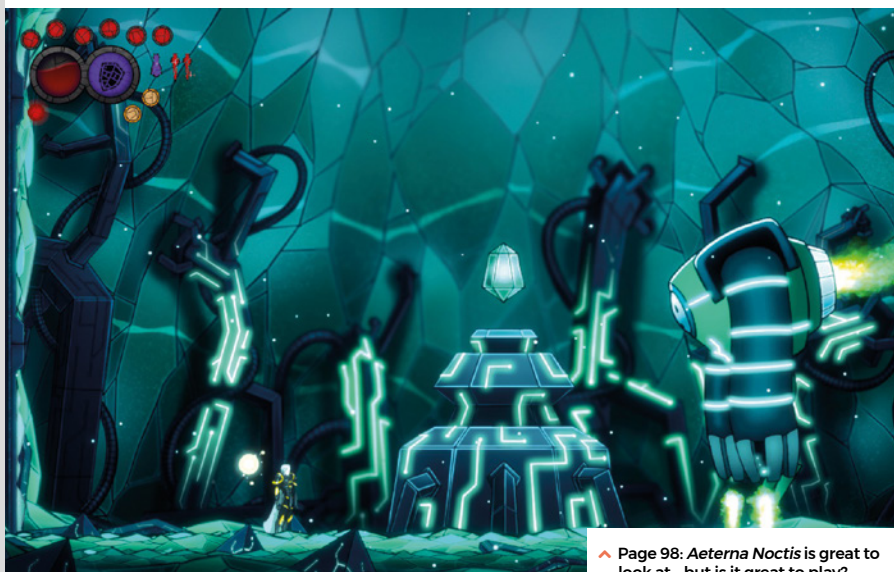


▲ Is this an advert? Maybe, but I'm hoping the evil overlords at Wireframe HQ won't notice.

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Reviews, retro games, and lots more besides

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- 98. **Aeterna Noctis** PC, PS5, XBS S/X, PS4, XBO, Switch
- 100. **Itch.io roundup** PC



^ Page 98: *Aeterna Noctis* is great to look at – but is it great to play?

## OUR SCORES

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Trash. Unplayable; a broken mess.
- 10-19**  
A truly bad game, though not necessarily utterly broken.
- 20-29**  
Still awful, but at a push could be fun for two minutes.
- 30-39**  
Might have a redeeming feature, but otherwise very poor.
- 40-49**  
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- 50-59**  
Average. Decent at best. 'Just about OK'.
- 60-69**  
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- 70-79**  
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- 80-89**  
Brilliant. Fabulous fun. Everyone should at least try it.
- 90-99**  
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- 108. **Now playing**  
What's been tickling Wireframe's fancy this past month?



^ Page 104: Ryan just won't leave that poor Game Gear alone – this month: batteries.



Review

# Mechajammer

## Info

**GENRE**  
Open-world RPG

**FORMAT**  
PC (tested) / Mac

**DEVELOPER**  
Whalenought Studios

**PUBLISHER**  
Modern Wolf

**PRICE**  
£19.99

**RELEASE**  
Out now

**SOCIAL**  
@mechajammer

## Cyberjank

“**M**aybe it’s just me,” I thought, warding off the pangs of disappointment at the end of my introductory session with *Mechajammer*. It wasn’t an unreasonable hypothesis. I’d enjoyed Whalenought’s previous isometric RPG, *Serpent in the Staglands*, but I remembered the bugs, the fiddly combat, the all-pervasive cantankerousness of a game so adamantly old-school they might as well have slapped a MicroProse sticker on the box and called it “Darklands 2”. “Maybe I’ve grown soft in the meantime. Maybe I’m playing it wrong?”

But there was more to it: a niggling sensation that all of that game’s vices had been turned up to eleven in *Mechajammer*, while its rough-hewn charm had vanished, sucked through a crack in the pavement and carried by the sewers that riddle the bleak city of Calitana.

First impressions were positive. The studio’s adept at delivering engrossing fish-out-of-water narratives, and *Mechajammer*’s premise is no different: in the distant future, the unemployed and insubordinate are forcibly enlisted to fight Earth’s endless wars against its colonies. That was the plan for your makeshift squad until fate intervened, and the vessel transporting them crash-landed into the outskirts of a crumbling city run by crime syndicates. Now you have to help the castaways survive the marauding gangs and rabid wildlife as they organise their escape from Calitana.

An arresting opening is promptly followed by a satisfyingly complex character creation system

whose range of upgradeable skills hints at depth and open-endedness. Preliminaries done, you step out into the gorgeously dreary urban sprawl, a futuristic hellscape of sickly lamplight greens, rotting-plank browns, and the blazing remnants from the latest outbreak of random street violence. Kevin Balke’s John Carpenter-like synths add to the overall atmosphere. This was a world I couldn’t wait to dive into.

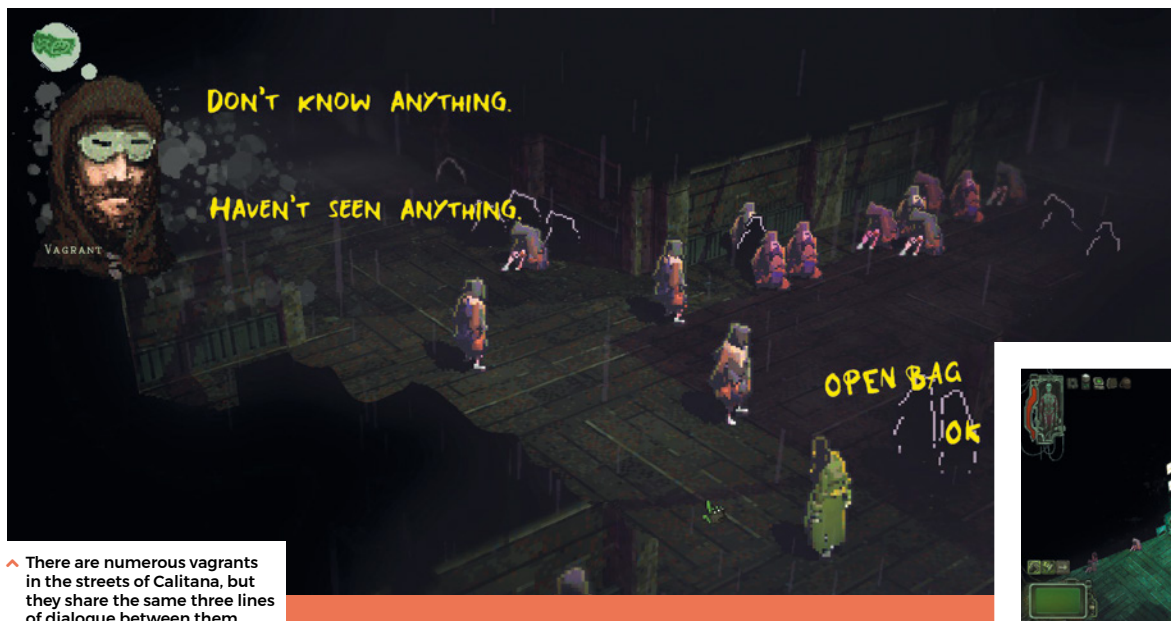
Only my first playthrough was cut short by a series of persistent bugs in the game’s saving system that, along with a downright antagonistic interface, left me uncertain as to where I was, what I was supposed to be doing, and whether I’d lost something essential along the way. Ditto my second attempt, after recognising that my stealth-oriented character couldn’t hope to survive the hazards of Calitana. So much for open-endedness.

For my third effort, I went with a combat-focused build and things were progressing smoothly – for a while. The previously scattered squad had reunited and set up a base of operations. I had dispatched some high-ranked lowlifes and was establishing a network of contacts. I was getting a feel for the city and even discovered a black market where I could purchase survival essentials. Things were looking up. Then, suddenly but not at all surprisingly given *Mechajammer*’s rickety state, I lost track of the main quest. I’d been following the game’s cryptic hints as closely as I could, but found myself lacking the items necessary to

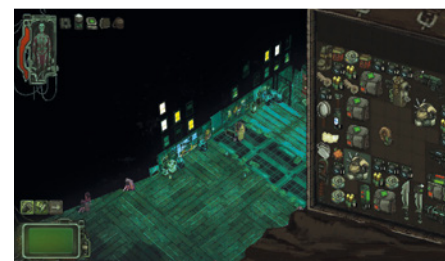
REVIEWED BY  
Alexander Chatziioannou



▲ The map is so zoomed out that, lacking an indication of your current location, it becomes practically useless.



▲ There are numerous vagrants in the streets of Calitana, but they share the same three lines of dialogue between them.



▲ The item in the centre of the cluttered inventory is a code wheel, essential for progress. It refused to work during this particular playthrough.

progress, or even a clue on how to procure them. I didn't know where to turn to next (certainly not YouTube where, a month after its release, not a single full-playthrough video has been uploaded).

So I tried exploring. But Calitana is a tedious labyrinth crowded by countless clones of the same handful of generic NPCs, a place where nothing of note ever happens unless you count looting unguarded crates or picking fights with families of rodents, an environment so utterly devoid of even the most rudimentary snippets of narrative that it registers almost like a parody of a modern open-world game.

I tried ogling the sights and immersing myself in the mood. But soon every building started looking the same, and the haunting main tune would grate after its umpteenth repetition. Attempts at conversation with the local residents produced the same set of mistrustful responses. This felt not like a fully fleshed futuristic dystopia but more like a glitch in the matrix, the same assets (visual, linguistic, aural) used over and over again, ad nauseam.

I tried role-playing. But the promise of complexity was consistently betrayed by a set of abilities that the game would trivialise so regularly as to render your choices moot. Why spend points on Burglary when you can just bash your way in? Why invest on Hacking when you're either straight-up given the codes to operate a terminal or blocked from accessing it, whatever your level of ability? The absurdity was exacerbated by the game's insistence on recognising only maxed-out scores: for my first build, I had spent one-third

of my available points on the relevant social skill, yet I never once passed a basic communications check to pump the locals for rumours.

I tried simply persisting. If I scoured the length and breadth of the city wasn't I bound to stumble on that elusive quest thread? But a ludicrously zoomed-out map that refuses to pinpoint your exact location sabotages any attempts to search Calitana's mind-numbing maze.

After an eternity of aimless wandering, revelation struck unexpectedly: in a corner of a buggy inventory I unearthed the code wheel I needed to progress, buried under a

combat knife and some laser-gun charges which overlapped on the same slot.

Sadly, my relief was short-lived. As I removed the surrounding clutter, it became obvious that the item wouldn't respond to the cursor, even after multiple reloads. A bug had diverted me from the main quest by sending me on a wild chase for an object already in my possession, then, once resolved, another bug completely blocked any possibility of progress.

Opacity in games can be a magical thing but, more so than any other style of design, the refusal to elucidate and handhold absolutely demands that the underlying systems function properly. After my third attempt at a playthrough ingloriously imploded like the two previous ones, I decided I'd had enough. As for that early disappointment, the confusion and frustration that followed it during 20-odd hours of mostly pointless wandering made it perfectly clear: no, it wasn't just me. It was definitely *Mechajammer*. 🗨

### “Calitana is a tedious labyrinth crowded by clones”

## HIGHLIGHT

For all its flaws, *Mechajammer* is obviously a labour of love from a smaller studio that overextended itself. Patches have been incoming thick and fast. While some of its issues are too deep-seated for a quick fix, the overall experience is certain to see major improvements in the near future.

## VERDICT

Despite the obvious talent that went into making it, *Mechajammer* is a rickety disappointment.

# 31%

HIGHLIGHT

Perhaps another influence on *White Shadows* is Disney's *Fantasia*, as it marries its action to well-known pieces of classical music. Factory machines shift in time to the lilt of *The Blue Danube*, for example, while an on-rails sequence leaping between speeding trains is backed by *Flight of the Bumblebee*. Clever touches that add an extra layer of magic.

Review

# White Shadows

For the birds

Info

**GENRE**  
Puzzle-platformer

**FORMAT**  
PC (tested) / PS5 /  
XB S/X / XBO

**DEVELOPER**  
Monokel

**PUBLISHER**  
Thunderful Games

**PRICE**  
£15.99

**RELEASE**  
Out now

**SOCIAL**  
@monokelgames

REVIEWED BY  
Jon Bailes

## VERDICT

Despite its inelegance, *White Shadows* is visually arresting and well-served with wicked ideas.

66%

Someone's been mixing their Orwellian dystopias. *White Shadows* takes the grim retro-industrial sci-fi of *1984* and fills it with *Animal Farm*'s bestial hierarchy, except here the wolves are in charge, demoting the pigs to play the role of downtrodden workers. Still, at least they have it better than the birds, the underclass in this metaphor for capitalistic inequality, stripped of all rights and demonised by the powers that be. Unsurprisingly, you fill the shoes of one of these feathered lumpen, trying to escape a monochrome city.

As dark satire goes, with billboards extolling the virtues of a drug-like consumable 'light' to the porcine citizenry, and all-caps signs shouting 'All animals are equal', it's a bit square on the snout. And it's not only the Orwellian themes that are well-worn either – *White Shadows* owes much to Playdead's

*LIMBO* and *INSIDE*, while its eye for the horrifying chimes closely with that of *Little Nightmares*. First impressions are of a clumsy and glitchy tribute act, as you float about in ungainly arcs and clip through scenery. Your bird is an ugly duckling, too, one of many plasticky character models that lack texture.

Right from the off, however, the city you sparrow your way around is stunningly imposing, enough to drive the game through its early stages. From an elevated view, hopping between girders and hurtling monorail trains in a junkyard suspended from the heavens, you soak in Gothic skyscrapers, phallic pipelines, wolf-headed airships, and solemn

queues of obedient hogs. All framed in flashing neon, like a carnival display of disparity shoving your head down a toilet marked 'entertainment'. It's a bumper pack of world-building to munch on while you're working through familiar jump and push routines, clambering on boxes and yanking elevator switches to progress.

*White Shadows* really hits its stride after the opening chapter, though, once it knocks you off your observer's perch. The middle of its three short hours especially hosts some half-decent platform puzzles and makes good on behind-the-scenes revelations hinted at from the start, placing you at their centre. At one point, you're literally jumping through hoops to avoid getting flattened and torched for the pleasure of a baying

crowd, while the most sinister twist unveils the truth of light manufacturing, bringing an even more disturbing meaning to the phrase 'battery farming'. It doesn't exactly shock, but it

lands thanks to some playful narrative delivery and the ingenious contraptions that make the nightmare tick.

The final act isn't quite so well-paced, as it forces you to swallow a hefty exposition dump in one go, yet even that is served in attractive packaging, and the actual climax that follows is satisfyingly neat.

With that, *White Shadows* is never really profound, but it's a delightfully macabre fairground ride with its heart in the right place. While not as equal as its big brothers, it shouldn't be treated as a second-class citizen. **W**

**"The city you sparrow your way around is stunningly imposing"**



Review

# Scarf

## HIGHLIGHT

When you're not seeking out and hunting down fellow citizens or the orbs needed to power up your dragon companion, *Scarf* doesn't disappoint with its collectables. Spanning simple toys, painted portraits, and bite-sized bits of story called inks, they help to further flesh out the context of *Scarf*'s mysterious world.

An otherworldly journey just about worth wrapping up warm for

**A**lmost three decades' worth of 3D platformers have taught us that any plucky hero is only as good as the magical item they carry with them. In *Scarf*'s case, the game's given away right from the off, with the titular attire being your primary means to whoosh through a trio of deeply atmospheric locations – all in the effort to (hopefully) elicit some heartfelt emotion. Much of the time this works beautifully; your wispy blue wanderer handles with grace as they launch between caverns or push blocks needed to solve the next puzzle laying before them. Other times, though, this relatively breezy adventure can feel a lot like a “baby's first outing” in the genre, even if it is still a fun ride.

*Scarf* wastes no time sweeping you up in its metaphorical tale. As one of the last members of an ancient race, you soon get to work trying to discover what happened to the others by teaming up with a scarf. Luckily, this one just so happens to inhabit a dragon spirit containing several useful skills. It's an intriguing setup, sure, yet the narrative largely comes over as wishy-washy. Saying that, it's forgivable considering the whimsical mood *Scarf* constantly evokes by way of its open level design, decent puzzle variety and

emphasis on the deepening bond between these two central characters.

If there's one major drawback, it's that most players have likely already experienced many of the platforming challenges *Scarf* cooks up in bigger, higher-budgeted games. Moving platforms, levers in need of pulling... all the usual candidates are here. What helps the game stand out, however, is just how much it's able to wring out of the core scarf concept. You'll glide, swing, and slingshot your way around the world in all kinds of inventive scenarios, to the point that it's no wonder that the best platforming sections are when you have to chain these various manoeuvres together in one clean sequence.

*Scarf* sees you constantly picking up new abilities that let you explore these lands in ways you couldn't previously. But as well as offering extra freedom, it's an appreciated extra touch that also helps further connect your hero with the dragon creature, communicating their friendship not through cutscenes or dialogue, but gameplay. Equally admirable and refreshing is *Scarf*'s complete lack of combat (and pretty much all forms of confrontation, really). Because while it would have been easy to litter the likes of the ocean, desert, and forest with their own type of meaningless enemy, it would only take away from the journey's otherwise fairytale-like sensibilities.

Overall, *Scarf* isn't one to blow your socks off when it comes to its particular brand of puzzles and platforming challenges. This doesn't, however, take away from it being a short yet undoubtedly sweet journey full of spirit and passion. Like its eponymous namesake, *Scarf* is a woolly adventure expertly primed to wrap you up in its comfort for at least a few hours, and that's perfectly fine. 🐉

## Info

**GENRE**  
Puzzle-platformer

**FORMAT**  
PC

**DEVELOPER**  
Uprising Studios

**PUBLISHER**  
HandyGames

**PRICE**  
£12.49

**RELEASE**  
Out now

**SOCIAL**  
@UprisingWorks

**REVIEWED BY**  
Aaron Potter

## VERDICT

*Scarf* is a charm-filled 3D platformer that nails its core conceit, yet it could benefit from more original genre ideas.

**65%**



Review

# The Gunk

Honey, I gunk the planet

## Info

### GENRE

Adventure  
platformer

### FORMAT

PC (tested) / XBO /  
XB S/X

### DEVELOPER

Image & Form

### PUBLISHER

Thunderful  
Publishing

### PRICE

£19.99

### RELEASE

Out now

### REVIEWED BY

Andrew King

➤ Rani and Becks aren't quite as alone on the planet as they initially believe.

**P**laying through *The Gunk* is the process of reversing an oozing allegory for the climate crisis; of sucking up the corruption that plagues a dying planet and returning it to unique and brilliant life.

Early on in developer Image & Form's first foray into 3D platforming, space truckers Rani and Becks arrive on a dark and barren planet. They're running low on fuel for their ramshackle spaceship and just as low on funds. So Rani, the more adventurous of the pair, sets out to find something – anything – they can use to reverse their fortunes.

As Rani explores this new planet, her mission becomes a quest to quietly save the world. Almost immediately, our heroine encounters a strange and damaging globular substance which she dubs – you guessed it – 'the gunk'. But by

using Pumpkin, a multi-functional device that fills the role of a prosthetic arm, Rani can suck the gunk up like an interstellar Luigi. As she clears it away, the barren world springs to life, sprouting megafloora to climb and useful fruits that might function as explosives or create helpful platforms when united with pools of green goop. The world revealed by removing gunk is beautiful, with brilliant colours and strange plant life – like flagella-covered tongues that extend to form bridges when activated.

The puzzles here are pretty simple – clear away gunk to reveal an object you can use to open a new path – but they serve their purpose as something to keep your mind occupied as you move from vista to vista.

The gunk is responsible for in-world problems, but also seems to cause its fair share of issues for the game's performance. The stuff is constantly shifting, moving, and responding to provocations from Rani's arm vacuum. As a result, performance often staggers when there's a lot of it on screen. Frames also dipped into the single digits on unexpected occasions, like while riding an ancient elevator. These drops rarely affected gameplay too much, but they were still a consistent annoyance throughout my time with the game.

After Rani has used her green fingers to clear out a safe spot for a base camp, Becks lands the ship and sets up shop. Mostly, that just means that there's a workbench here for Rani to use







▲ Space truckers Rani and Becks arrive on *The Gunk*'s mysterious planet via their rickety ship.

after a spot of exploration. The world is filled with ore to mine and fibres to collect, all of which can be hungrily vacuumed up. From there, the materials can be repurposed into upgrades, netting Rani simple skills like the ability to run or deploy bombs. You will unlock most possible upgrades fairly quickly, so much of the game is spent sucking up orbs you don't actually have much use for. *The Gunk*'s world is intrinsically fun to explore, but the upgrade loop here never really sings as extrinsic motivation. There just isn't enough there to keep it interesting for long.

That's mostly OK because *The Gunk* clocks in at around six hours, give or take. It works great as the kind of game that was a bit more common ten years ago: a straightforward, linear experience where the fun has little to do with upgrading a character and very much to do with running, jumping, and puzzling through the well-designed world that Image & Form has crafted. Still, the game has much less going on, mechanically, than the studio's previous 2D titles like the stellar *SteamWorld Dig 2*. Sucking

**“Thanks to Pumpkin, Rani can suck up gunk like an interstellar Luigi”**

up gunk never becomes challenging, even when the game begins to throw enemies at you in the second half. But *The Gunk* makes up for that lack of depth with a gorgeous surface and controls that never get in the way. In the end, *The Gunk* is a good first step for Image & Form if they intend to keep working in 3D. The game's graphically impressive, and exploring its world is fun, if unsurprising. I hope the developer can manage to dig a little deeper next time, though. Like a planet swept clean of gunk, the surface is spotless, but I'd really like to see more complexity working underneath. 

**HIGHLIGHT**

*The Gunk* is extremely pretty. Though its stylised art differentiates it from ultra-realistic triple-A system sellers, it often looks just as impressive, offering improbably jaw-dropping vistas, memorable character designs, and a gorgeously textured world.

**VERDICT**

*The Gunk* offers a beautiful and original, if slightly shallow, world to explore.

**68%**

HIGHLIGHT

The king of darkness is a refreshing protagonist and polar opposite to the clichéd amnesiac. Locked in an eternal struggle with the queen of light, he's done all this countless times before. Like the veteran player, then, he knows exactly what's required to regain his throne and even treats tutorials with laconic disdain.

Review

# Aeterna Noctis

A hard day's night, and then some

Info

**GENRE**  
Metroidvania

**FORMAT**  
PC (tested) / PS4 / PS5 / Switch / XBO / XB S/X

**DEVELOPER**  
Aeternum Game Studios

**PUBLISHER**  
Aeternum Game Studios

**PRICE**  
£24.99

**RELEASE**  
Out now

**SOCIAL**  
@aeternathegame

REVIEWED BY  
Jon Bailes

## VERDICT

A gorgeous, sprawling Metroidvania, hamstrung by a mean spirit.

60%

**Y**ou can see what this gigantic Metroidvania is aiming for. A Symphony of the Hollow Knight, mixing Alucard's Gothic strolling with the scale and stiff challenge of Hollownest. All good things. But *Aeterna Noctis* is a little too hung up on difficulty. Even its easier setting (patched in after launch) only turns the harshness down a little, and then at the cost of disabling achievements – a hint that developer Aeternum is more concerned with the integrity of its grand design than whether it's as fun as it might be.

Still, there's no denying it's a fine piece of work – a sprawling fresco of 2D artistry, spanning devastated cities plagued by wandering spirits, fire-damaged churches, and crystal mines teeming with goblins. The layouts of its lavish halls are painstakingly intricate, with hundreds of treasures, NPCs, and useful things neatly tucked behind magic barriers, or in safe spots between spike-toothed pits and walls.

Yet this is the craft of a master painter who got caught up in the details and didn't know when to stop. Every area in *Aeterna Noctis* is exasperatingly big. The first main goal, a golden tower, is so remote it barely fits on the map, and when you arrive at its base, an ascent of Everest proportions remains to reach the summit. It's almost comically dispiriting as you wall-grab, air-dash, and pogo-attack onwards and upwards for what seems like forever.

At points like these, *Aeterna Noctis* is as much *Celeste* as *Castlevania*, but without as much

invention and self-control. It doesn't help that your avatar, the king of darkness, is a touch less lithe than is ideal, forcing you to play with a heavy hand, heaving the stick away from enemies before an evasive dash, stamping on the jump button to reach the expected height. Anything less and you fall foul of a stickler's insistence on precision, which feels unearned when some abilities, like the wall jump, are temperamental, or harmful objects mingle in exuberant backgrounds.

The wide open structure can be needlessly uncompromising, too. Countless branching passageways prick at your explorer's instinct, but might snake for miles before halting abruptly at gates you're not yet equipped to pass. And thanks to a paucity of shortcuts and fast travel points, you may have to retrace your steps, and repeat the journey later. Fool you once and from then on you're followed by a nagging doubt that you've done things in the wrong order, especially when struggling against a boss.

But that nagging doubt also makes *Aeterna Noctis* hard to walk away from, precisely because there are so many attractive routes to look into and cryptic quests to unravel. And because, for all the irritations, *Aeterna Noctis* is only some judicious editing and a kinder heart away from at least being a strong warm-up act for *Silksong*. For those with Zen-like patience, this opaque, gruelling adventure might still represent a tantalising challenge, even while, for the rest of us, it's just being difficult. 🗨

**“Every area in Aeterna Noctis is exasperatingly big”**

# RETRO GAMING

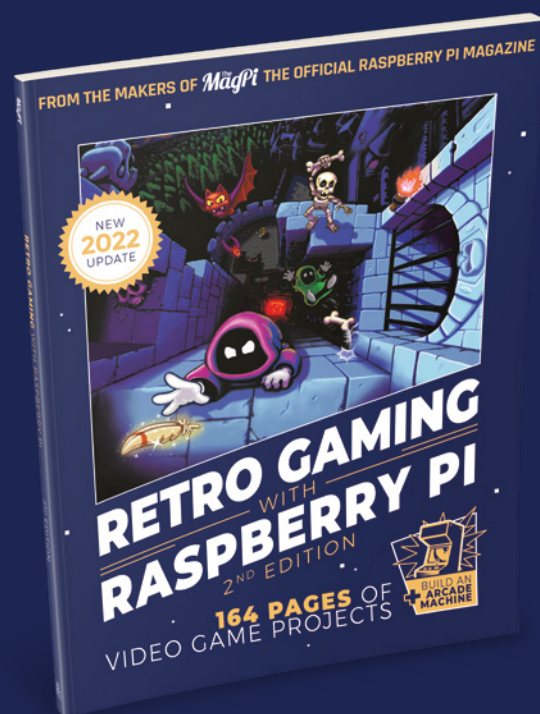
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# RASPBERRY PI

## 2<sup>ND</sup> EDITION

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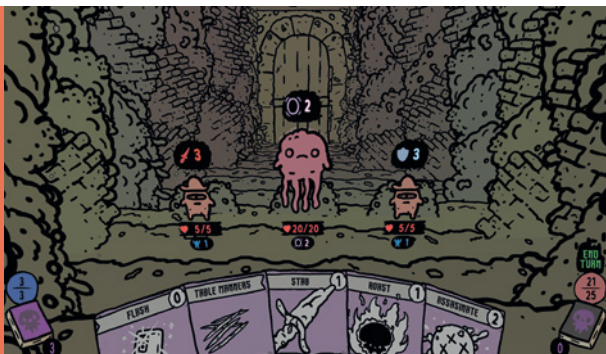


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Why not try...

# Itch.io roundup

Picking out some of the platform's standout titles | REVIEWED BY Nic Reuben



## Shroom and Gloom

TeamLazerBeam / Name your own / [wfmag.cc/shroomgloom](http://wfmag.cc/shroomgloom)

Ah, mushrooms. Truly the Marmite of the Earth. Not a fan? No worries. You'll get plenty of chances to stab and set fire to dozens of the adorable soil-dwellers in *Shroom and Gloom*. Broadly, it's *Legend of Grimrock* meets *Slay the Spire*. Rogue-lite first-person dungeon-crawling gives way to card-based battles against ferocious fungi, with deck-building meta progression. The trick here is using specific cards to finish your foes off in order to 'roast' them for some health back. Speedy and smart, with a colourful and charming papercraft style. Tad short currently, though. Spore's the pity.

## HRANA

Buldozer / Name your own / [wfmag.cc/hrana](http://wfmag.cc/hrana)

The German-Bohemian borderlands are reimagined as a pulsing, dreamlike landscape in this short audio-visual piece. Negative space crumbles away like chipped plaster as the dreamscape opens up; dried grass and elder roots give way to chasms in the earth and bizarre industrial foliage.

The prevailing atmosphere is one of contemplation tinged with the natural melancholy that change inspires, but there's still something undeniably hopeful about this psycho-geographic, meditative stroll.



## Cogs of Combat

hwilson / Free / [wfmag.cc/cogs](http://wfmag.cc/cogs)

Yep, it's a 2D *Gears of War* demake-style parody. But! It's also incredibly tight and responsive to play. Interestingly enough, it turns out that when you boil down third-person cover shooting to its 2D essentials, it's effectively a souped-up *Space Invaders*. Much like the original, you spend your time running between cover, popping off shots, dodging grenades, and throwing your own. Fifteen minutes well spent, honestly.



## Dunebug

Blendo Games / Free / [wfmag.cc/dunebug](http://wfmag.cc/dunebug)

As far as I can tell, the plot here revolves around two Cyclopes that drove into a nest of bees, and now the bees are chasing them down. But in normal, human-sized cars. *Dunebug* has the strangely juxtaposed appeal of a *GTA* chase sequence, where you hang out of the window with an Uzi blasting at pursuers, mixed with an endearingly dodgy physics game. Your Cyclops buddy shoots automatically, so your job is to careen over the sand dunes, avoiding cars, and collecting ammo pickups. Bafflingly addictive.

The bonus game this month is me trying to eat every new Veganuary fast food offering in the next two weeks. Remember: it's not gluttony if it's good for the planet. See you next month.

# ▶ STREAM OF CONSCIOUSNESS

This month we look to our own: it's **Kim Justice**

### What's your favourite game?

That's always a tough question, but I would have to go with *Final Fantasy VII*.

### And why is that? What is it about that particular game that resonates so much with you?

I've never been a particularly big RPG player, but *FFVII* does take me back to a certain time and place – it was one of the first games I played on the PlayStation, and going from the Mega Drive to that was quite the leap. The epic story and setting was something that I could completely immerse myself in, and that's something I've always looked for in games ever since – to be taken along on a big old ride. It helps that, silly models aside, a lot of things about the game have held up quite decently.

### What game was it that got you into gaming to begin with? What are your enduring memories of it?

It's hard to say as my earliest memories of gaming were on a ZX Spectrum +2, and I was very young at the time. While those games might have struggled to load on occasion (bloody R Tape Loading Errors...), some great times were had, especially when you could get so many of the games for pretty cheap. *RoboCop* is one that will always stick out, I suppose – having watched the film at way too young an age, it was a joy to be able to actually play as Murphy and take down thugs with the Auto 9.

### Has there ever been a point you've been put off gaming? If so, why?

Not really. I suppose that there have been times when I've been put off by newer games; if there are too many big releases around that all seem to be the same blooming game. But then I've always been into retro, so whenever that's the case, I'll just plunge into that and try and



discover some cool stuff. And then there's always something more exciting, whether it's a big game or an indie, that'll excite my curiosity and pull me back in. I don't think there's been a time when I stopped gaming altogether, really.

### What's the appeal of playing games for an audience – whether that's pre-recorded or livestreaming?

As far as livestreaming goes, it's the sheer enjoyment of it – it tends to be a collective experience of sorts, where I'm happy to let the audience contribute, we get sidetracked often, and chat about who knows what. Being that I'm a variety streamer, it's rare that I actually complete anything, but it's fun! Videos are a different beast, of course – edited documentaries and the like about games of old are a bit more focused, but finding good topics, diving deep into them, and then having people enjoy the results? That's always the best bit. 🗣️

Kim streams a couple of times a week over at [wfmag.cc/KJ Twitch](https://www.twitch.tv/wfmag), and releases videos weekly over at [wfmag.cc/KJYT](https://www.youtube.com/channel/UC...)

**“There's always something more exciting that'll pull me back in”**



# The Wireframe **HOTLIST**

The best PC games, according to Wireframe, catering for whatever your mood might be

## The games for... **BIG ADVENTURES**

**Assassin's Creed Odyssey** / *Ubisoft* / **93%** (Issue 1)

**Yakuza: Like a Dragon** / *Ryu Ga Gotoku Studio* / **90%** (Issue 45)

**Amnesia: Rebirth** / *Frictional Games* / **87%** (Issue 46)

**Death's Door** / *Acid Nerve* / **87%** (Issue 55)

**The Last Campfire** / *Hello Games* / **86%** (Issue 47)

**Resident Evil 2** / *Capcom* / **86%** (Issue 7)

**Journey to the Savage Planet** / *Typhoon Studios* / **84%** (Issue 33)

**The Outer Worlds** / *Obsidian Entertainment* / **84%** (Issue 28)

**Eastward** / *Pixpil* / **84%** (Issue 57)

**Monster Boy and the Cursed Kingdom**

/ *Game Atelier* / **84%** (Issue 6)



## The games for... **REPEATED PLAY**

**Hades** / *Supergiant Games* / **94%** (Issue 44)

**They Are Billions** / *Numantian Games* / **88%** (Issue 20)

**Sekiro: Shadows Die Twice** / *FromSoftware* / **87%** (Issue 11)

**Streets of Rage 4** / *DotEmu/Lizardcube/Guard Crush* / **86%** (Issue 40)

**Trials of Fire** / *Whatboy Games* / **84%** (Issue 50)

**Katamari Damacy REROLL** / *Monkeycraft* / **84%** (Issue 4)

**Spelunky 2** / *Mossmouth* / **83%** (Issue 44)

**Hitman 2** / *IO Interactive* / **82%** (Issue 3)

**Alba: A Wildlife Adventure** / *ustwo Games* / **82%** (Issue 46)

**Slay the Spire** / *Mega Crit Games* / **81%** (Issue 45)



## The games for... **SOLID STORY TIMES**

**Disco Elysium** / *ZA/UM* / **94%** (Issue 28)

**Life is Strange: True Colors** / *Deck Nine* / **89%** (Issue 57)

**Mutazione** / *Die Gute Fabrik* / **86%** (Issue 26)

**Whispers of a Machine**

/ *Clifftop Games/Faravid Interactive* / **85%** (Issue 14)

**The Forgotten City** / *Modern Storyteller* / **85%** (Issue 55)

**Mythic Ocean** / *Paralune* / **84%** (Issue 36)

**Sunless Skies** / *Failbetter Games* / **83%** (Issue 7)

**Arise: A Simple Story** / *Piccolo Studio* / **82%** (Issue 31)

**Assemble with Care** / *ustwo Games* / **81%** (Issue 27)

**The Walking Dead: The Final Season**

/ *Telltale Games/Skybound Games* / **81%** (Issue 11)

## The games for... **FIRING UP BRAIN CELLS**

**Telling Lies** / *Sam Barlow* / **92%** (Issue 24)

**Kentucky Route Zero** / *Cardboard Computer* / **90%** (Issue 33)

**Slipways** / *Beetlewing* / **90%** (Issue 53)

**Heaven's Vault** / *inkle* / **89%** (Issue 12)

**The Pedestrian** / *Skookum Arts* / **84%** (Issue 35)

**The Legend of Bum-Bo** / *Edmund McMillen* / **83%** (Issue 31)

**A Monster's Expedition** / *Draknek & Friends* / **82%** (Issue 47)

**Total War: Three Kingdoms**

/ *Creative Assembly/Feral Interactive* / **82%** (Issue 16)

**It Takes Two** / *Hazelight Studios* / **81%** (Issue 51)

**Wanna Survive** / *PINIX* / **80%** (Issue 42)



The games for... **HIGH-INTENSITY PLAY**

**Tetris Effect** / *Monstars Inc./Resonair* / **90%** (Issue 4)

**Sayonara Wild Hearts** / *Simogo* / **89%** (Issue 25)

**Chivalry 2** / *Torn Banner Studios* / **88%** (Issue 54)

**Hot Wheels Unleashed** / *Milestone* / **86%** (Issue 56)

**Star Wars: Squadrons** / *EA* / **86%** (Issue 45)

**Devil May Cry 5** / *Capcom* / **84%** (Issue 10)

**Black Bird** / *Onion Games* / **84%** (Issue 3)

**BPM: Bullets Per Minute** / *Awe Interactive* / **83%** (Issue 45)

**Resident Evil Village** / *Capcom* / **82%** (Issue 52)

**Catastronauts** / *Inertia Game Studios* / **82%** (Issue 1)



The games for... **CURING THE INDIE ITCH**

**If Found...** / *DREAMFEEL* / **92%** (Issue 44)

**Can Androids Pray**  
/ *Natalie Clayton/Priscilla Snow/Xavier Nelson Jr.* / **90%** (Issue 21)

**Tales From Off-Peak City Vol. 1** / *Cosmo D* / **89%** (Issue 39)

**Baba Is You** / *Hempuli Oy* / **88%** (Issue 10)

**TOEM** / *Something We Made* / **87%** (Issue 57)

**Afterparty** / *Night School Studio* / **86%** (Issue 33)

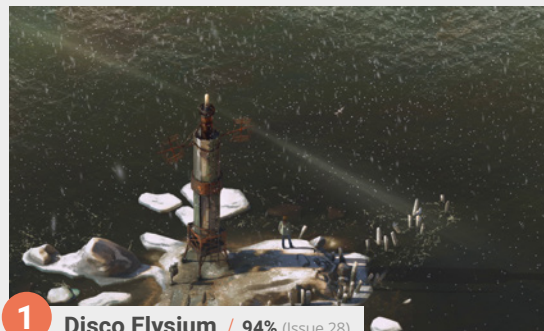
**Witcheye** / *Moon Kid* / **86%** (Issue 30)

**Hypnospace Outlaw**  
/ *Tendershoot/Michael Lasch/ThatWhichIs Media* / **86%** (Issue 11)

**Haunted PS1 Demo Disc** / *The Haunted* / **85%** (Issue 39)

**Chicory: A Colorful Tale** / *Greg Lobanov* / **83%** (Issue 54)

# PC Top 10



**1 Disco Elysium** / **94%** (Issue 28)

Smarter and deeper than anything else; truly an RPG in a class completely of its own.

**2 Hades** / **94%** (Issue 44)

Proving 'roguelike' isn't a dirty word, learning-and-dying is a joy from start to finish.

**3 Assassin's Creed Odyssey**  
/ **93%** (Issue 1)

The point where Ubisoft realised over-the-top adventures were the right direction.

**4 Telling Lies** / **92%** (Issue 24)

This FMV mystery asks more of the player than most, with rewards to match.

**5 If Found** / **92%** (Issue 44)

A compelling and beautifully illustrated narrative, as moving as it is memorable.

**6 Yakuza: Like a Dragon** / **90%** (Issue 45)

A bold, brash, and joyous rebirth for the long-running gangster series.

**7 Tetris Effect** / **90%** (Issue 4)

The question is 'how do you better *Tetris*?' The answer is: like this. This is how.

**8 Kentucky Route Zero** / **90%** (Issue 33)

Abstract style meets concrete commitments in this fantastic magical realist adventure.

**9 Can Androids Pray** / **90%** (Issue 21)

A healthy dose of existential anxiety in a minimalist, bite-sized package.

**10 Slipways** / **90%** (Issue 53)

A focused puzzle game masquerading as space empire-based grand strategy.

# Backwards compatible

WRITTEN BY RYAN LAMBIE

## Just Juice

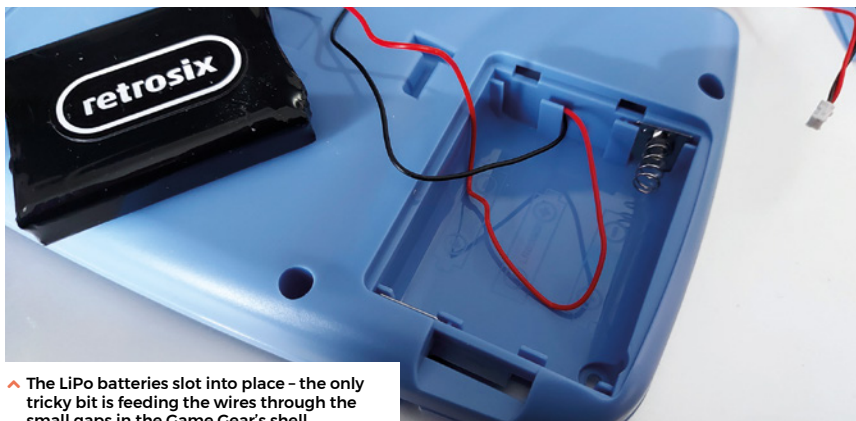
One of the most common – and justified – criticisms levelled at the Sega Game Gear was its ravenous appetite for batteries. If you were lucky, a set of six AA batteries would last you about 120 minutes – a far cry from its contemporary, the Game Boy, which could make four AA batteries last for around a dozen hours. The Game Gear's chief selling point was also its Achilles heel: its colour LCD screen, backlit by a fluorescent strip light, was the hidden vampire that sucked all those batteries dry.

Various solutions have helped remedy this in recent years, of course. Screen modifications get rid of that hungry strip light, while replacement power boards like RetroSix's CleanPower GG mean you could

use, say, a USB-C battery bank to play the Game Gear without resorting to half a dozen AA batteries.

RetroSix's most recent modification, meanwhile, makes the Game Gear more portable than ever. The CleanJuice USB-C

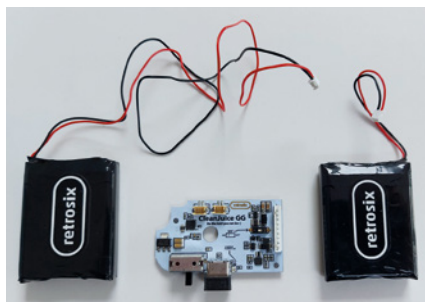
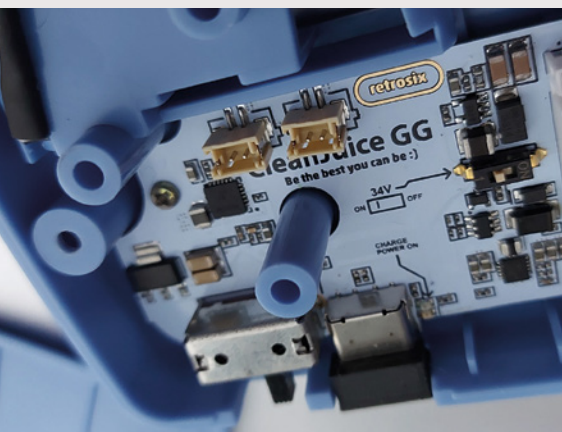
Battery Pack allows you to charge the console from a pair of rechargeable lithium polymer battery packs, which fit snugly in the compartments where AA batteries once sat. The beauty of this mod is that, like the CleanPower GG, it's extremely simple to install – all you need to do is open the Game Gear's case, remove the existing power board by disconnecting it and taking out a pair of screws, and then the CleanJuice board slots happily in its place. The trickiest part of the installation comes from those dual LiPo packs: two of the Game Gear's existing battery terminals need to be removed from the compartments to give the packs room to fit, and then the battery cables need to be fed through gaps in the console's shell and plugged into the connectors on the CleanJuice. With this done, those new cables need to be



▲ The LiPo batteries slot into place – the only tricky bit is feeding the wires through the small gaps in the Game Gear's shell.



- ▼ The CleanJuice mod is a straight replacement for the Game Gear's original power board. All you really need is a screwdriver.



carefully routed around the existing screw posts inside the Game Gear's shell, so they don't get snagged or damaged when it's all put back together – I used a few small pieces of tape to keep the cables neatly stowed against the shell's edges.

All told, though, the CleanJuice mod can be installed within a few minutes or so, and once the console's all screwed back together, you have a retro console that can be charged via USB-C like a modern mobile phone, and will reportedly last 13 hours or more on a single charge. Certainly, the modded console you can see gracing these pages (also fitted with a RetroSix CleanScreen display) has positively sipped battery power in my testing so far. It's only taken 30 years, but the Sega Game Gear is finally a console you can legitimately play for an entire car or plane journey without running out of juice.



Officially released in the UK in March 2021, the Astro City Mini was a chunky nostalgia machine designed to look like the distinctive cabinets that once lined Japanese arcades in the 1990s. Pre-loaded with Sega mainstays like *Shinobi* and *Golden Axe*, it was an unexpected but fun little gadget – and certainly better built than SNK's similarly arcade-shaped offering, the NEOGEO Mini. If you thought the line-up of games on the Astro City Mini was a bit too familiar, though, then you should check out the Astro City Mini V. Due out in Japan this summer, it's positively stuffed with vertical shooters

from legendary developers like Toaplan and Psikyo: among the 22 games you'll find the likes of *Raiden*, *Tatsujin* (better known here as *Truxton*), and *Sonic Wings*. One particularly deep cut is *Out Zone*, a rare run-and-gun from Toaplan that was never converted to home computers or consoles. The supremely niche status of the Astro City Mini V's games means the device is likely to remain Japan-only, but if you're a fan of shoot-'em-ups, Sega's latest offering could well be worth the hassle (and cost) of an import. You can find the full list of games on the Astro City Mini V at [wfmag.cc/astrocity](http://wfmag.cc/astrocity).

## Squadron Goals

We've covered the work of Brazilian software engineer and ROM hacker Vitor Vilela more than once on these hallowed pages, and with good reason: he's managed to take some notoriously slow games from the Super Nintendo's library and finally bring them up to speed. One particularly masterful effort was his patched version of *Gradius III* – an early release for the SNES that was dogged by slowdown back in 1989. By employing an SA-1 coprocessor, however, Vilela managed to create a modified version of the shooter that ran at its intended pace, either on original hardware or via an emulator.

A couple of years on, and Vilela's back with another patched SNES game: *U.N. Squadron*, better known in Japan as *Area 88*. Although not quite as glaringly dawdling as *Gradius III*, Capcom's horizontal shoot-'em-up still juddered when too many enemy planes and bullets



crowded onto the screen – something Vilela has again all but eliminated with his technical ingenuity.

Vilela's other slowdown-zapping projects also include *Super R-Type*, *F-Zero*, and *Contra III* – you can find all his optimised SNES games on his GitHub ([wfmag.cc/VVGames](http://wfmag.cc/VVGames)). It's worth pointing out that these projects aren't quick to fix: *Gradius III* alone reportedly took three months of "disassembly, code analysis, and code editing". If you've enjoyed his work so far, then you can find Vilela's Patreon at [wfmag.cc/PatreonVV](http://wfmag.cc/PatreonVV).

# Backwards compatible

WRITTEN BY IAN 'DYNAMO' DRANSFIELD

## Some best-of lists

Why not, eh? Here's my five favourite gaming machines and five favourite games for each one, with a wee sprinkling of the reasons why...



### PLAYSTATION 2

#### METAL GEAR SOLID 3: SNAKE EATER 📺

The point where *MGS* really started becoming what it ended up as, *Snake Eater* is so rich a world, so utterly riddled with ideas, I was enamoured in every single one of my many playthroughs.

#### ACE COMBAT: SQUADRON LEADER

It looks great, it plays as a fine arcade plane-'em-up, but it was the story that hooked me in *Squadron Leader*. Melodramatic overblown nonsense it might be, but it's *incredible* melodrama.

#### SHADOW OF THE COLOSSUS

A wonderful example of a game that manages to rise above both being a bit clunky *and* having lots of pretentious

idiots waffling on about how good it is, *SotC* is one of my absolute faves.

#### WWE SMACKDOWN! HERE COMES THE PAIN

You've already seen it if you've looked at this month's System Profile, but it bears repeating: it's one of the best combat 'sport' games ever made. I played career mode for *years*.

#### PRO EVOLUTION SOCCER 6

This was the console generation of football greatness for Konami, and – for me – it was *PES 6* that hit the highest of high notes. I dread to think how many hours were lost to tournaments between friends.

## GAME BOY ADVANCE

#### ASTRO BOY: OMEGA FACTOR

Licensed nonsense? Sure, but it's by Treasure so it is – as you might expect – phenomenal. Extremely challenging, too. A better game than it had any right to be.

#### FINAL FANTASY TACTICS ADVANCE

I do believe 75% of my final two years of uni were spent playing this game, *and* I never actually finished it. The absolute best *Tactics* spin-off for *Final Fantasy*.

#### ADVANCE WARS 2: BLACK HOLE RISING

Remake/sters be damned, I want a new *Advance Wars*. Adorable warfare, the second game was slightly more magnificent than the first. A true classic.

#### MARIO KART: SUPER CIRCUIT

The first ever portable *Mario Kart* was, helpfully, also a brilliant game – pretty much a do-over of the SNES original with a few bells and whistles.

#### HARVEST MOON: FRIENDS OF MINERAL TOWN 📺

Sweet potatoes. What a crop. I didn't speak to the townsfolk because I needed my farm to be perfect. Then the battery in my cartridge – which I didn't know was a fake – died. I lost it all. It still hurts.



I think people who like Chickens are just good people. Don't you agree?



## AMIGA

### SYNDICATE

It opened my mind to what games could be – sure, it's limited by modern standards, but in 1993 I was able to explore an entire open world. And murder people indiscriminately in it.

### CHAMPIONSHIP MANAGER '93

I'm almost sad to admit that this was the beginning of my lifelong *Champ/Footy Manager* addiction, but it is what it is. I periodically go back to this one to play a 1-4-5 formation and see what happens.

### CRAZY CARS III

*Lotus Turbo Challenge* almost made the cut, but it was the edgier atmosphere – gambling! Police chases! – that helped *Crazy Cars III* get the nod here. A wonderful arcade racer.

### THE CHAOS ENGINE

Why settle for *Gauntlet* when you can have its much better looking, much more stylish, much cooler descendent? Why, indeed. Few other games are ones I quote regularly. NODE ACTIVATED.

### FRONTIER: ELITE II

With the star map stuck up on the wall and the best trade routes memorised, I must have played *Frontier* for *hundreds* of hours. And yet I still never got above the ranking of 'Dangerous'. Hmph.



## SNES

### SUPER MARIO WORLD

It's one of the best games ever, isn't it? A flawless platforming masterpiece, and the sort of game that will continue to be used to educate younger players on what qualifies as 'good stuff'.

### STREET FIGHTER II TURBO: HYPER FIGHTING

I had *Street Fighter II* on the Amiga, so the leap to *Turbo* on SNES was mind-altering stuff. Endless summers full of endless one-on-one fights – the stuff of halcyon youth legend.

### MORTAL KOMBAT II

And then when I wanted a bit more gore to sate my teenage desires, *MKII* on

SNES came knocking. So much blood, so many secrets (Johnny Cage's triple-decapitation being the favourite), so much cheating AI.

### INTERNATIONAL SUPERSTAR SOCCER DELUXE

*ISS Deluxe* grabbed my attention and held fast. Playing seven-minute matches, easiest difficulty, Brazil versus Morocco, just to win 35-0... we all did it, didn't we?

### THE FIREMEN

More games about firefighters, please. *The Firemen* is still magnificent fun to play to this day, and sees an enemy we can all happily unite against without arguing about it on Twitter: fire.

## PC (pre-2003 to keep it retro-y)

### HALF-LIFE

A high watermark for all of gaming history, *Half-Life* simply changed everything. It's one of those things I'm happy I'm able to say 'I was there' about.

### UFO: ENEMY UNKNOWN

I first played it on PSone, but the PC version was where I realised just how much time I'd be able to sink into this strategy masterpiece. Because the loading times weren't measured in months.

### DOOM

I never had a PC around *DOOM's* release, but my friend's dad had one for his accounting job, and we secretly installed

*DOOM* on it. I'm still riding that particular high, and will never stop loving *DOOM*.

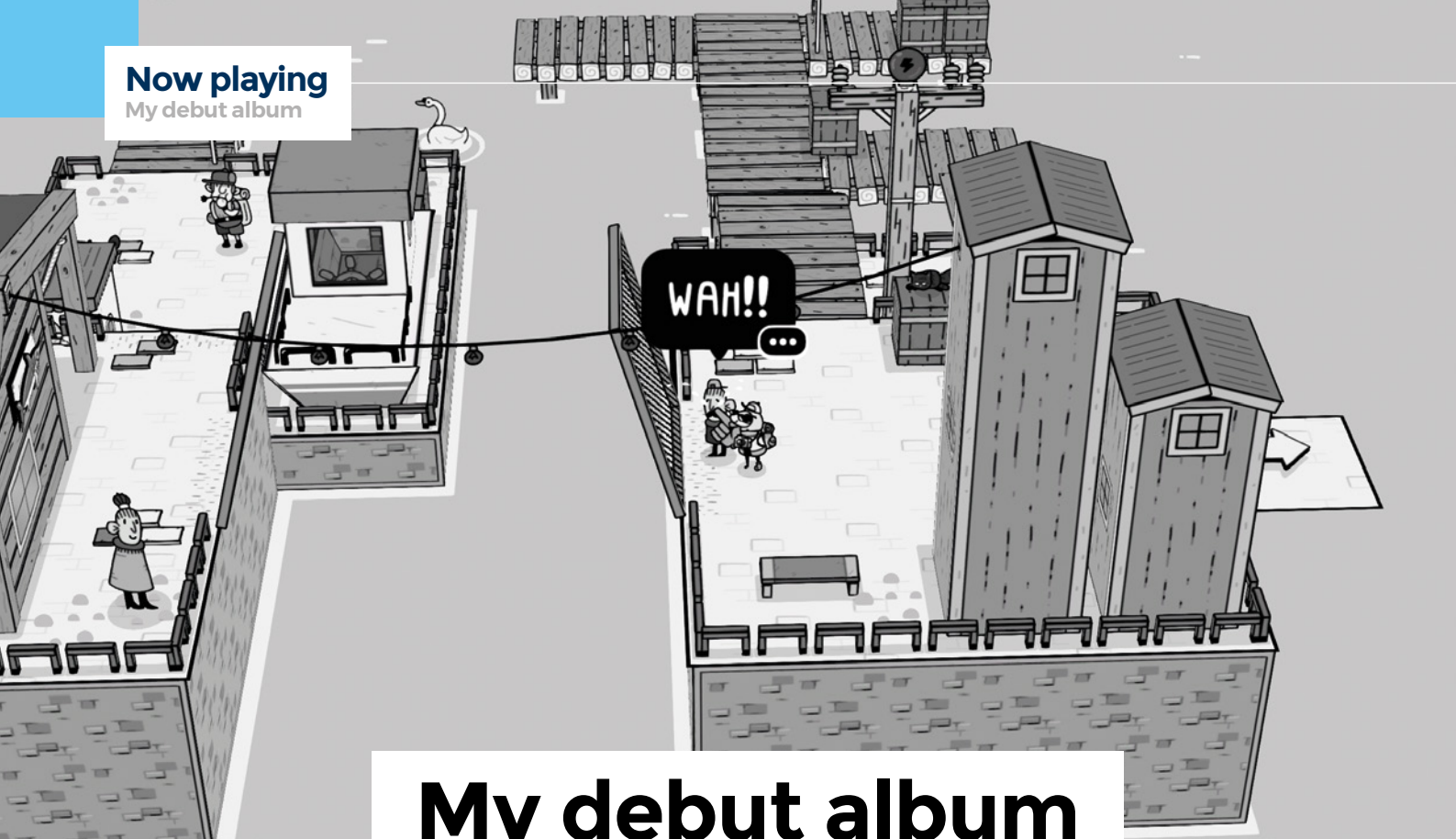
### COMMAND & CONQUER: RED ALERT 2

University. Networked PCs from downstairs to up. Walkie-talkies. Snacks to keep us going. *Red Alert 2* was – for a bit – our entire life. What a superb game.

### DEUS EX

The freedom afforded was initially overwhelming – I literally didn't know what to do, because the game gave me so many options as to what I *could* do. And so... yeah, love at first (being) sight(ed) by an enemy when trying to be stealthy.

Now playing  
My debut album



## My debut album

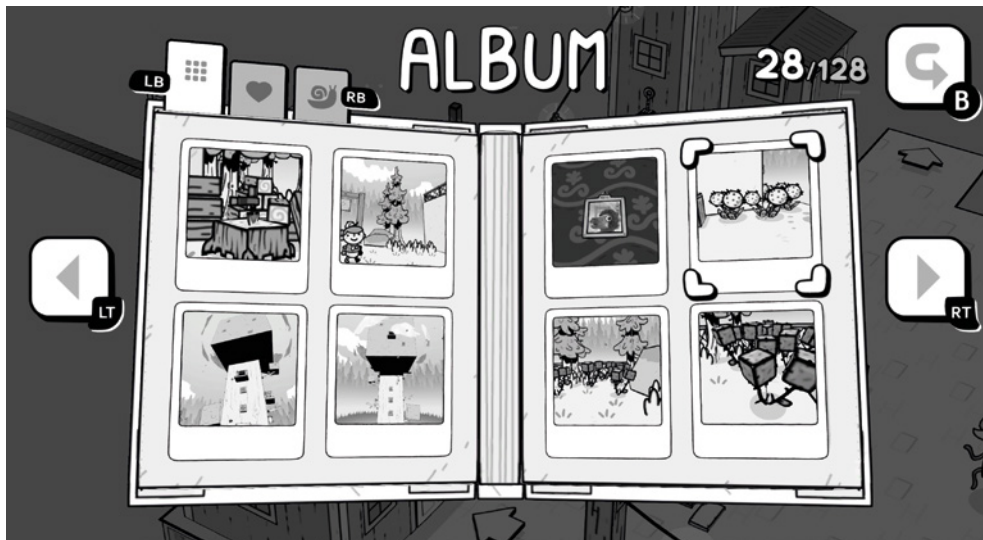
Ryan brushes up on his camera skills in the charming  
*TOEM: A Photo Adventure*

**G**iving players plenty of tasks to do in a game is one thing. Actually making those tasks feel enjoyable – and actually worth doing – is quite another. For every game where we've felt compelled to complete every side quest or grab every collectable, there are surely several dozen other instances where it's all begun to feel like pointless busywork. Did anyone genuinely enjoy, say, collecting all 100 feathers lying around in *Assassin's Creed II*?

*TOEM: A Photo Adventure*, on the other hand, creates a world of genuinely pleasurable errands to run and oddments to find. Its brevity certainly helps: its monochrome world of paper cut-out characters and boxy 3D houses can be appreciated in about two or three hours; even completionists probably won't take too much longer to cross every activity off their to-do lists. *TOEM's* true masterstroke, though, is its design and writing: developer Something We Made creates such a captivatingly disarming world of offbeat characters and odd jobs that engaging with it all constantly remains a pleasure rather than a chore.

There are a few parallels between this game and *Chicory: A Colorful Tale*, which I explored in these pages last month. Both take place in hand-drawn worlds, largely drained of colour; both are about interacting with that world artistically. In *Chicory*, you had an enchanted paintbrush; in *TOEM*, you're given a vintage still camera, whose lens can be used to engage with the environment in all kinds of imaginative ways. One NPC might ask you to take a photo of a personal item they've lost; another might give you the challenge of photographing a particular piece of flora or fauna. But there are all sorts of other ways you can use your camera, too: its zoom function can be used as a telescope,





allowing you to peer through ocean fog and spy stricken ships on behalf of a panicking lighthouse owner. More whimsically, you can also acquire a horn attachment – perfect for scaring away pesky seagulls and the like.

Wrapping all this up is a feather-light coming-of-age story. As *TOEM* begins, you're nestled among the crackling fire and soft furnishings of home, before an unspecified parental figure packs you off with your bag and camera on a voyage of discovery.

Your ultimate goal is to climb Kiiruberg Mountain and capture a “magical phenomenon” called *TOEM* – apparently a rite of passage in your family, because your parent says they did the same thing at your age and captured their experiences in a chunky photo album.

Off you set, then, with the goal of filling up an album of your own. The path to Kiiruberg Mountain is a winding one, taking you through idyllic, discrete little communities whose residents are beset by minor problems like purloined socks and missing sandwiches. Solving those problems (mostly, but not always, by using your camera) will earn you stamps in your community card; you can then spend those community stamps on a bus ride to the next area, which takes you a step closer to your ultimate goal. There are also little gift boxes dotted around, each containing an item of clothing you can wear or simply add to your

growing inventory – they're entirely optional, but still a joy to find. Within an hour or two, my character was clad in a curious get-up which included a diver's helmet, an umbrella, and one of those pointy sponge fingers you used to see at sporting events.

The real joy, though, is the photography, and the process of saving the snaps you take to your photo album. The journey you pick through *TOEM* may be a linear one, but the photographic

element gives the game an individual touch: yours is a prescribed path trodden by other players, but the way you capture it is uniquely yours. With

the camera equipped, you're free to zoom in and out, or flip the device around to take selfies. You can also sit your camera on a tripod to take images remotely. The further you get in the game, the more your album fills up with your own, sometimes iffully taken photographs of strange places and things – it soon becomes a unique, personal document of your progress through the game.

Then there's the phenomena of the game's title – something I won't spoil by describing in any detail here. It's enough to say that it really is as magical as you're led to believe at the start of the whole experience. *TOEM: A Photo Adventure* is, therefore, a rare beast: a game whose destination and task-filled journey are both more than worthy of your time. 📷

“There are a few parallels between this game and *Chicory*”

## Wireframe Recommends



### Alba: A Wildlife Adventure

XB S/X, PS4, PC, SWITCH

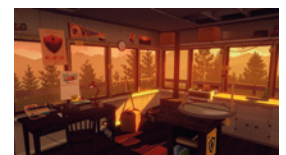
Yes, we've banged on about *Alba* a lot, but that's because it's such an exquisite little eco-fable: a little girl sets out to save her island from greedy developers, one good deed and wildlife snap at a time. The perfect companion game to *TOEM*.



### New Pokémon Snap

SWITCH

There's a lot of grind involved, as our review in issue 52 pointed out, but *New Pokémon Snap* remains a breezily fun updating of the N64 rail-shooter. We can at least be grateful it wasn't reworked as a microtransaction-stuffed mobile title. Shudder.



### Firewatch

PC, MAC, XBO, PS4, SWITCH

Campo Santo's first-person adventure is nail-bitingly intense, with every inch of its isolated location mined to create a sense of mystery and unease. Photography isn't central to the story, but it's another instance of a game allowing you to interact with the world in your own way.

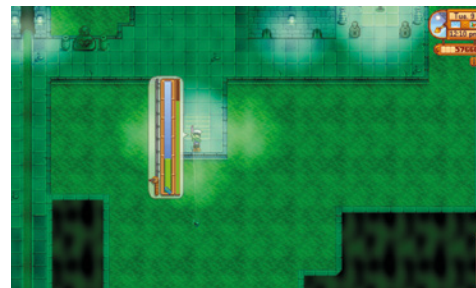
# Farmageddon

Ian goes back to his roots (and tubers, and fruits) with *Stardew Valley*

All these months over all these years, and I've been lying to you. I say I'm 'now playing' something or other – and I do play whatever it is, sometimes a lot – but my heart's never been in it. Because my heart belongs to *Stardew Valley*, as it has since 2016. This was no more apparent to me than all the way back in issue 14 – May of 2019, five-point-seven billion years ago – when I realised I'd accidentally started living out *Stardew* in my real life.

That didn't last. Two things – got a dog, married to a space genius who likes dungarees – remained, but living on a farm in the countryside with plentiful gardening ('weeding') and growing my own produce went the way things do when you move to another home that has what scholars refer to as 'a crap garden'. I'll get it back, one day, because I miss it. But one thing that hasn't gone away is *Stardew Valley*. It has lasted, it has remained, it will prevail when all else in this world is dead. Oops, that went grim quick.

Since last writing about it, the game has had two major updates (and plenty more minor



ones) – and a board game has been released. I have it on pre-order at the time of writing, because of course I do. But those updates to the video game version have brought with it significant new chunks of Stuff To Do, including a brand new island to explore. A whole new batch of game to waddle through over half a decade after the original game actually came out? Wonderful stuff.

You'd be forgiven for thinking this is where I pivot to 'so I was exploring the new island in *Stardew* and will now write about it'. Because I wasn't, and I won't. No, what I did was go back to my PC save, untouched for a couple of years, to pick up where that left off – it was dropped suddenly when the Vita, PS4, and Switch versions of the game came out because those were all more convenient to play. Heading back to this OG save is like opening a time capsule; seeing how nascent my understanding was of absolutely pillaging the land for all the natural resources – and so profits – it could provide me was cute, in a way. My need to build pretty pathways and little enclosures for each individual fruit tree felt quaint. Fences to keep the animals penned in? Oh past Ian, my sweet summer child. How naive you were.

So it is I've gone into this past save – this relic of a pre-enlightened *Stardew* player – with a mission: to try and retain the spirit in which this version of the game was being played. It wasn't about naked profit. It wasn't about ending up with three or four giant pumpkins at the end





of the autumn harvest. It certainly wasn't about selling out to the Joja Corporation. It wasn't about efficiency, or maximising yield – placing as many sprinklers in ideal positions as possible to automate as much of the growing process as possible, before planting nearly a thousand seeds (which would have been more were it not for my lumber farm taking up significant space)? Perish the thought.

No, I've come back to this incarnation of *Stardew* with the goal of renewing that casual approach. I want to take things slowly, not push myself to complete tick-list goals presented to me. I want to make a farm that works, sure, but I want it to be one that actually looks quite good when you take stock of everything. Yes, the farms on Vita and PS4 and Switch brought in hundreds of thousands of pounds when it came to selling what I'd grown, but the actual farms looked like garbage. You know, like real profit-driven farming operations do.

I'm going to bring beauty into things. Utility, of course, will come into it – the path placement will have to make sense, the fence positioning can't be more obstacle than useful post-holing. But the overall goal is to revisit that more innocently minded version of playing the game

**“If that means drawing rude shapes using crystal path tiles, so be it”**

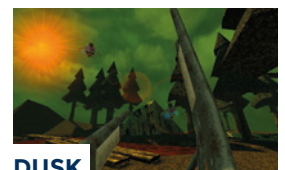


and engage more with the creative aspects of it. If that means drawing rude shapes using crystal path tiles, so be it – I am not guided by my art; my art guides me. If it means placing the Mayor's underpants front and centre in some form of indoor display... well, I don't know if I can actually do that, but I'll certainly try. If it means getting Krobus to move in, then that will be a dream

come true. I don't know what the future holds, but I'm excited to find out.

There's the beauty of *Stardew Valley* – even now, years after it released, years after I started playing it, I'm still finding new (old) ways of playing it and enjoying it. Giving myself new challenges and tweaking my approach to mix things up. That's why it endures, and that's why it will continue to endure long into my games-playing future, and long after I've gone from the pages of *Wireframe*. Which is right about... *now*. Be excellent to each other; it's been a blast. 🐣

## Wireframe Recommends



### DUSK

PC, SWITCH

Three games I reviewed and scored highly for the mag, starting with *Quake*-like *DUSK*. A wonderful, fast-paced FPS full of inventive level design, delightfully silly gore, and a pacey challenge.



### Mutazione

PC, PS4, XBO, SWITCH, IOS, MAC

A haunting, affecting narrative adventure that deserves to be played by everyone with a heart. Helpfully, it's also sickeningly stylish and cool, as well as genuinely funny at times. A real gem.



### Slipways

PC, MAC, PICO-8

A pacey, more bite-sized take on the 4X genre that also excises the 'eXterminate' aspect of the typically colonialist-themed genre. It's both one giant puzzle and a nice relaxing time, simultaneously.



# System Shock

Audible angst and anger: it's the miracle of audio logs

LOOKINGGLASS TECHNOLOGIES / 1994 / PC, MAC

**T**he actual concept of the audio log is almost 30 years old now, which is... surprising. Given it required developers to be able to include extended recordings of real speech to be played at the discretion of the player, it's not something you'd get much of on floppy disk or cartridge. Of course, the CD-ROM was making waves in PC gaming by the early 1990s, and 1994's *System Shock* was all too happy to take advantage of this gigantic bump in storage space.

Notes and written diaries – cutscenes, even with voice-overs (or real actors) – were all standard by 1994, of course, so being told a story in a game that wasn't just a printed 'Are you a bad-enough dude'-style introduction wasn't a surprise. But stumbling across these logs in LookingGlass Technologies' seminal FPS/RPG hybrid offered something so much more impactful – so much more *intimate* – than what had come before.

It's almost as though you weren't supposed to find these things around the place – the story you could piece together from listening to them all, weaving the tale of *things going wrong* on a space station while rogue AI SHODAN gets naughty in cyberspace. It felt less regimented: less of a setup for the action to follow and more the remnants of a world that existed before you, the player, even got there. Immersion proved to be the biggest impact of audio logs, and it was surprising they took so long to really catch on as a concept.

They did, of course, thanks to *System Shock's* spiritual successor *BioShock*, which released in 2007 with dozens of 'note to self'-style recordings scattered around the failed

underwater utopia of Rapture. While not a new feature, audio logs did catch on thanks to the sheer weight of popularity behind *BioShock*, with the game far outperforming both previous *System Shock* titles, thanks in no small part to it being available on the big consoles of the time.

And, well... from there it just hasn't stopped. Even today, plenty of games just include straightforward audio logs, with characters narrating some aspect of the game's back story – important or not – for the player to listen to, or skip, or zone out on as they so choose. Audio logs are as commonplace as guns, destruction, and violence are in mainstream video games, often giving developers a way to cram in some story

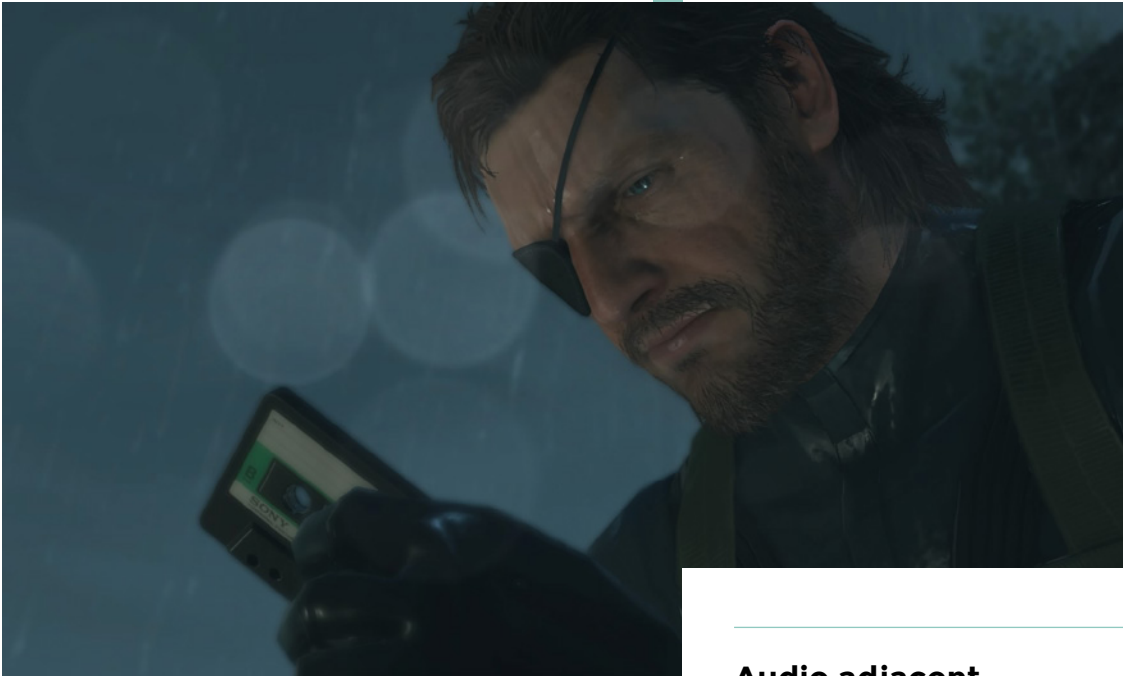
between bouts of blasting. They're no longer exciting, and nobody really bats an eye at their inclusion – except maybe to lament that many aspects of storytelling have been diluted into these audio-based LiveJournal entries scattered around plenty

of post-apocalyptic battlegrounds.

Some games do try to carry the torch with audio logs, mind, though to differing levels of success. *Metal Gear Solid V: The Phantom Pain*, for example, contained almost its entire *actual* story on a bunch of audiotapes the player could collect as they went about infiltrating and exfiltrating to their heart's content. Complaints that the much-vaunted Kiefer Sutherland's starring role was hardly much of a role at all were countered by the fact that 'Mr 24' did actually record a lot of dialogue for the game – it was just included as optional, easy-to-ignore audio logs rather than in Hideo Kojima's usual five-hour-long cutscenes and codec conversations.

**“They're not exciting any more, and nobody bats an eye at their inclusion”**





More successful was something like *Dishonored*, which did include traditional audio logs – and written ones, cutscenes, overheard dialogue, and every other aspect of modern video game storytelling.

But it also developed the system with the inclusion of The Heart. This item allowed the player to read the innermost secrets of people around them, offering an optional, reactive, almost live-update version of the audio log system. Rather than pressing record and spouting their innermost desires, though, you were using supernatural methods to draw them out. The Heart is still one of gaming's best things, period.

It's just not possible to list every game that's taken advantage of audio logs as a storytelling crutch – Giant Bomb lists some 106 as featuring them, and there's likely plenty more not listed there. Plus, there are derivative and modified versions of audio logs, be they ghostly apparitions reliving an experience in front of you or something else – there are plenty of ways of handling the idea. And yes, they've been used too much, to the point of parody, and are often shorthand these days for 'lazy' storytelling.

But there's still a big place in many a heart for audio logs: an inelegant solution they might be, especially used by themselves, but the route of secondary storytelling – of not just forcing the player to be hammered over the head with exposition – is one that has to be celebrated, especially when it's done well like the earlier *Shock* games and their spiritual descendants like *Dishonored*. Anyway, we're off to read this article aloud into a tape recorder then drop said recorder down a well for someone to discover in 20 years' time when society has imploded. 🗣️

## Audio adjacent

The other techniques for storytelling... well, they're all pretty old and come from places that aren't video games, with audio logs – the player has control over when and where they listen to them – being something unique to the medium. But there are still other routes used and developed for that delicious secondary storytelling, such as Remedy's proclivity for having a TV show playing in the background that gives you an info dump, or a look at the main character's mental state. Then, of course, there's the ever-reliable 'scrawled info on a wall', which we saw make a gory return with *Back 4 Blood*, but is probably most famous from both that game's predecessor, *Left 4 Dead*, and Valve's masterpiece, *Portal*. Stories!



# Next Issue

ON SALE 3 MAR

## SMALLAND

A closer look at a tiny multiplayer survive-'em-up with big ideas

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