

Art Direction

Animation

"To make a game look good."



The
Jai

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The Gamasutra Deep Dives are an [ongoing series](#) that aim to shed light on how specific design, art, or technical features within a video game come to be, in order to show how seemingly simple, fundamental design decisions aren't really that simple at all.

Check out [earlier installments](#), including creating drama through a multitude of simple tasks in [Bomber Crew](#), or maintaining player tension levels in [Nex Machina](#), and achieving seamless branching in [Watch Dogs 2's Invasion of Privacy missions](#).

Who: Thomas Vasseur, artist at [Motion Twin](#)

Hello friends,

"Big dreams yet limited means" could be the motto of pretty much all indie teams out there. It certainly was mine when I began work on our first steam game, [Dead Cells](#), here at Motion Twin.

My name is Thomas Vasseur and for one year, I was the only artist on *Dead Cells*, designing and animating every aspect of the game. I was in charge of the Art Direction, characters, monsters, animations, special effects (FX) and most of the background of *Dead Cells* all on my lonesome... Until, fortunately, my evil twin [Gwenael Massé](#) came to help, factually doubling the number of artists on *Dead Cells*.

However, since being understaffed is a common reality in our sector, I think you might be interested in learning how I managed to stay sane during my time alone in the trenches. Assuming I'm still alive and all of this is not just an illusion.

What: A 3D workflow to design qualitative animations and new models – fast

I began by drawing a very basic 2D pixelart model sheet, which I use as a base creating the character and its skeleton in 3D (with 3DS Max), then I export it in filmbox format. The 3D modeling is very basic and would probably make the eyes of any credible 3D artist bleed.

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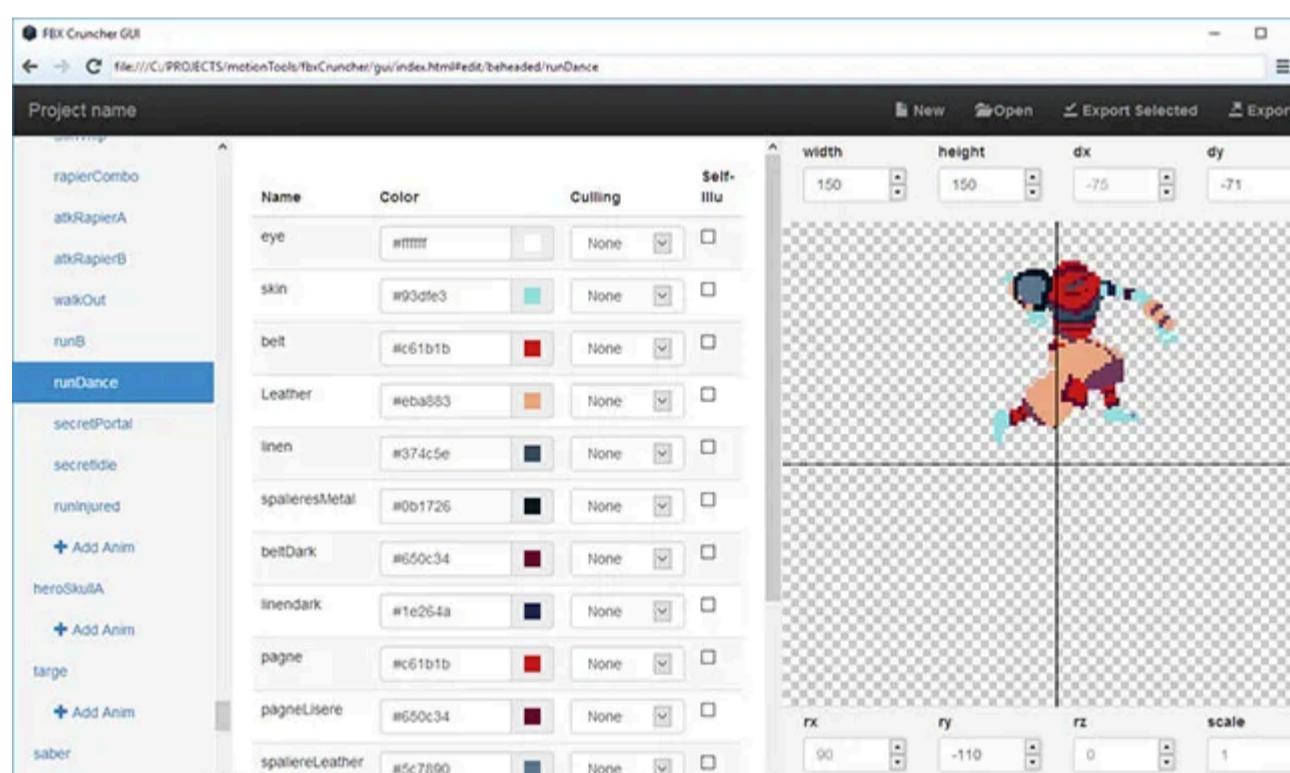
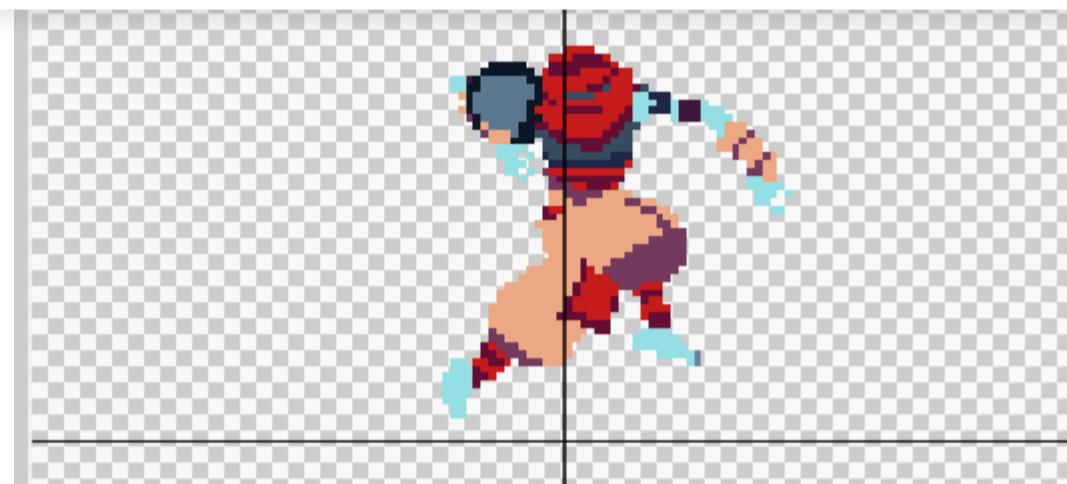
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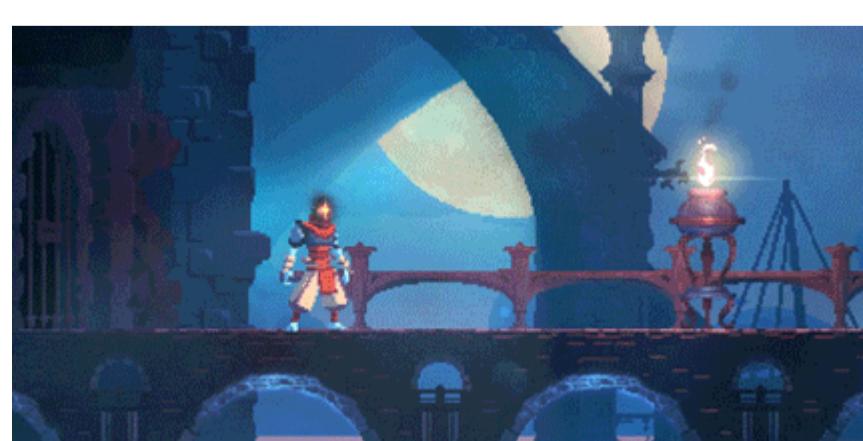
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Now, it's time to make the model move. *Dead Cells*' animations are designed, like 2D animations, on key frames. Once, and only once, the animation is convincing and correctly timed with the least amount of frames possible, I add interpolation frames before or after the key frames. Never in-between. Therefore, our attacking animations are essentially pose-to-pose animations, and we utilize VFX to give a sense of movement, impact and strength.



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At this point, most of the work is done. We export each frame of the animation we made with the 3D skeleton to a .png, along with its normal map, allowing us to render the volume using a basic toon shader.



Exporting the whole as a sequence of frames also allows us to slip in a blend mode or two for an added wow effect.



Of course, these damn gameplay programmers can never get anything right the first time... They are always changing their minds. Which they actually should, really. In this case, my process for handling retakes is fairly simple demanding very little time. If the timings are the issue, moving the keyframes in the timeline will do the trick. Changing the pose isn't really a problem either.

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Just move
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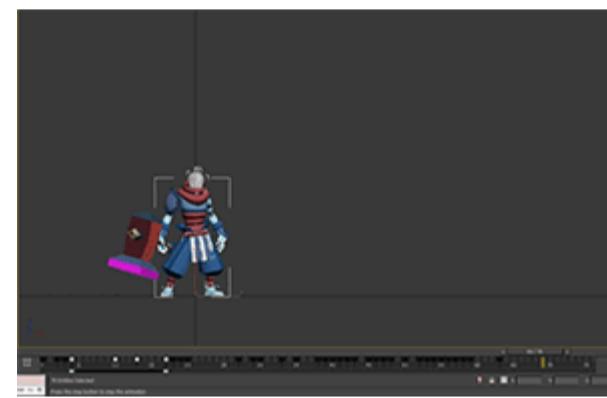
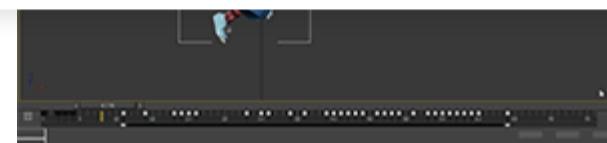
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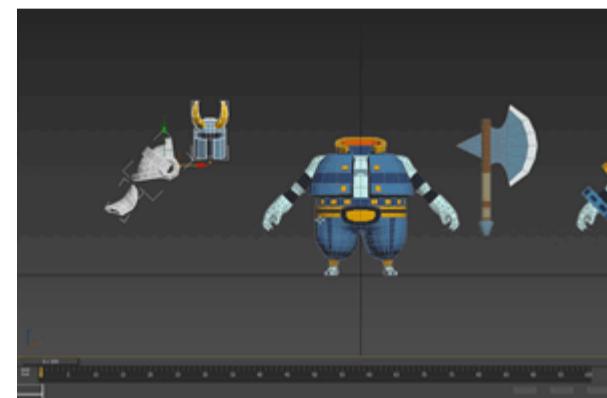
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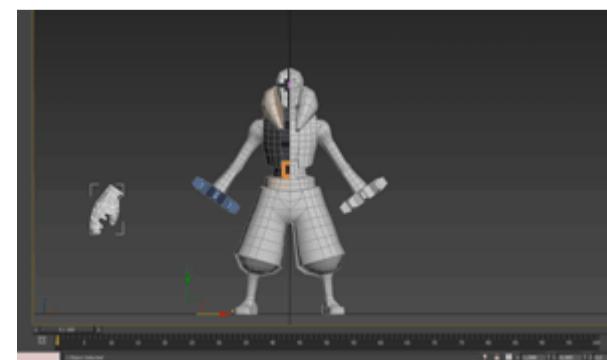


Actually, both of these retakes combined took me less time than uploading these GIFs, but that may also be because I'm a very inefficient Gif maker.

This 3D workflow also offers two other major advantages compared to a more traditional 2D process. Firstly, if I want to add some elements to an old model, for instance, a piece of armor, it's easy as pie. I just have to attach the asset to the 3D model.



But the real benefit of 3D modeling is the ability to reuse old assets, designed for previous sprites, when creating new characters (in our case, mostly monsters).



This is probably the single most useful little trick in our workflow, sparing me hundred of hours of work, so I've got that going for me, which is nice.

Why?

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Lots of

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Impact

Loads

An abundance of weapons with specific gameplay.

The 3D Dead Cells workflow I have described above actually has its roots in another project. In 2015, Matthieu Capdegelle (one of the *Dead Cells* devs), Yoan Laulan (also working on *Dead Cells* as Sound Designer) and I partnered to enter the Ludum Dare 32. We came up with a game called *Scarkrow*, a 72-hour-prototype-of-a-game, and maybe the first sign that we wanted to make a fast-paced, violent, platformer. However, using Flash, it took me ages to draw half-decent 2D animations and, in the end, the results didn't really live up to our expectations.

Although, at the time, we saw some potential in the concept, and Motion Twin has always been a company where experimentation is encouraged, even if nothing comes out of it. After the Ludum, we spent a good 3 weeks working on *Scarkrow* and at this time I already knew I couldn't keep up with the pace with a traditional workflow.

Drawing inspiration (excuse the pun) from *King of Fighters*, *Blazblue* and, later, the last *Guilty Gear*, we decided to make the most of 3D animation. This method gave us several advantages:

- No need to redraw each frame
- Possibility to reuse the same animation on various models
- Automatic generation of the interpolation frames to get smooth animations
- Quick and easy retakes to match the gameplay

With this method, we were able to hit 30Fps for the animations, which doesn't cure cancer, but may help a bit with the flu (as everyone knows), and it saved us heaps of time. The prototype is freely available here, if you want to see how it looks for yourself.

With *Dead Cells*, we had a couple of issues to fix before we could reuse the same workflow. Firstly, with *Scarkrow*, I had to draw all the shadows by hand on all the frames, a costly process we avoided by designing a lightning system with that in mind. And *Dead Cells*, as opposed to *Scarkrow*, was a pixel art game so we also had to build a tool to "pixelate" the characters. We knew we would have those needs beforehand because we allowed ourselves to experiment in the past, so this is a practice I highly recommend.

Result

In retrospect, the most important advantage of this workflow has to be the ease of doing retakes. The satisfying and nervous combat at the core of *Dead Cells* is the foundation the rest of the mechanics are built on. In the previous projects I worked on, where I was doing traditional hand drawn animation, we could not do retakes on animation once we had finished them. It was simply too costly, we didn't have the time. As a result the final gameplay took a big hit. And directly adjusting the speed of the animation in the code wasn't taking up the slack

In Dead Cells, we will hold a competition for a 3D model of a character. The deadline is 15 minutes. The winner will receive a prize of 1000 Gamasutra points.

Of course, we will accept 3D models of characters without a clean texture. Clean textures are not required for the competition. Clean textures are not required for the competition.

Well, I really like the one way to do it. It's not work, but

Even if our project, n

Read more
Gama Arc

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About



Thomas Vasseur
Blogger

Source: <https://www.gamedeveloper.com/production/art-design-deep-dive-using-a-3d-pipeline-for-2d-animation-in-dead-cells-i>