My name is Brandon Davis, and I was a 3D artist on Lego Island back in 1996. It's been a long 20 years since that experience and I'm kind of surprised to hear how popular the game ended up being, so I'm just going to write down my recollections of working on the game. I'll try not to get too detailed, but I suspect some of the technical details will be interesting to folks. I also think for the sake of context, I should describe my life before and since.

Prologue

In the spring of 1996 I was in my late twenties, and had recently gotten out of the Army to pursuit my dream of doing computer animation for movies. I had grown up in San Francisco in the 70s and Marin county (just to the north) in the 80s, and was knee deep in the George Lucas empire – living literally down the street from Skywalker Ranch. I had a passion for art as well as loved to tinker with computers, yet I enlisted in the Army as soon as I turned 17 in order to see and experience the world. Over the course of about seven years on active duty, I became a paratrooper, learned several languages, served overseas in Europe, and worked with allied forces. But the mid-nineties was a difficult time to be an ambitious soldier, with so much post-Cold War downsizing going on, limited budgets and opportunities, even within elite units. In my spare time in Germany, I built computers for friends and dabbled with graphics software, but it wasn't until I saw “Jurassic Park” that I decided that I wanted to leave the Army and be a part of this new digital wave in movie visual effects.

When I left the Army, I moved back to my hometown, spent most of my savings at that point on a new computer and dedicated myself to learning 3D animation. You have to understand, in late 1995, professional 3D animation was mostly done on enormously expensive and inaccessible Silicon Graphics Inc (SGI) computers. These were state of the art workstations with RISC-based chips made my MIPS that ran at very high clock rates, had lots of memory (64MB!), and most importantly had dedicated 3D hardware acceleration. These $50,000+ workstations used a flavor of Unix called IRIX and were really only available if you were at a university or job that had them. For example, at the time, I had friends that worked at Lucas Arts developing early Nintendo 64 titles on a quarter-million dollar SGI Onyx. The nearby Academy of Art College in San Francisco had opened up an SGI lab as well – there was demand in both games and visual effects (VFX) for people who knew this platform in 1995. The other, less prestigious and much more accessible route, was via a PC, and there was a bit of a revolution happening with 3D software at the time. This was just as Windows 95 was starting to catch on, but to professionals the focus was about Windows NT, which was more extensible, could use more memory as well as multiple CPUs (something that's a given these days, but very exotic in the 90s). For visual effects work on these systems, the real king was Lightwave 3D, which had just been ported over from the Amiga and Video Toaster, to Windows NT (as well as numerous other platforms). For games, it was all about 3D Studio from Autodesk, a company local to me that thanks to a contact there, I was able to get a not-for-resale version of the software. Keep in mind, in those days, you couldn't really do professional 3D on a “home computer” - it needed to be pretty beefy. You also pretty much had to teach yourself as the internet was still relatively new and there wasn't this amazing resource to learn from.

So I spent what I had to build a Pentium-120MHz, bought 32MB of RAM for $1200 (memory was crazy expensive until the late 90s), a giant 21” CRT monitor and went to learning 3D Studio about 16 hours a day. While I learned quickly, I found it very difficult to find 3D animation jobs in my area, even though I was in the epicenter of this digital revolution. George Lucas' ILM was just down the road from me, but unless I had SGI experience they wouldn't even look at my stuff. To make ends meet I was doing a lot of web page work for people and companies, but barely making any money because I was an idiot. The local shop in Novato that I was buying computer parts from ended up hiring me to build systems for them – so finally I had predictable work, though I still wasn't doing what I wanted.

Lego Island

About a month into my job at PC Plus, I was just curiously looking through the want ads in the local paper, the Marin Independent Journal (before the internet was popular, it was common to find jobs this way), and was completely surprised to see an ad for “Wanted: 3D Studio Animators”. I immediately called the number and scheduled an interview. Rich Hone was an animator/businessman from the east coast who'd settled in Marin and started an animation company called Imagine This. The game company Mindscape had contracted Imagine This to help create assets for their new game, Lego Island. Mind you, this was going to be my first paying gig doing 3D animation, so I had no idea about anything. I showed up wearing cheap slacks and a button shirt and Rich kind of laughed at me (I quickly learned that a t-shirt and shorts would suffice for just about any animation interview), but he reviewed my demo reel and offered me a job. A demo reel is vital, especially when you're new and don't have a word-of-mouth reputation; it allows someone to either see what you've done on other projects or at least your personal capabilities. At this point, I hadn't done anything professionally, so the reel just consisted of cool animations I'd made on my own. I was heavily influenced by anime as a kid, so I had spent months making a sequence that was a rather primitive space battle along the lines of what you'd see in “Macross” or “Space Cruiser Yamato.” It would be embarrassing to look at that demo reel today; so many lens flares.

So I quit my job at the computer shop and started work at Imagine This, which Rich ran out of his town house in Terra Linda. At this point there were a couple of other people he'd hired, one of which was experienced, having briefly worked on the movie “Starship Troopers” which was still in production at the time. The computers Rich had for us were kind of outdated, and me being naive and super-gung-ho (remember, I was still former super soldier guy), I just decided to bring my awesome computer from home and do all my work on it. The way I saw it, I was going to spend my waking hours doing this anyway and I liked to think of myself as a team player – yeah, naive.

The team quickly filled up as Rich brought on more people and we started to get a feel for what we were going to do on the project. This made the space in his house pretty cramped, but one day he announced that he'd secured a nice office in a complex down the road, which we quickly moved to and started banging away on the project.

From the beginning, the concept of Lego Island was pretty revolutionary. PC games at this time weren't really 3D – sure, Doom seemed 3D, but wasn't really. And home PCs didn't have hardware accelerated 3D all that much back then, so the idea of doing a real 3D game with polygons and shading seemed pretty ambitious. Mindscape had a development team making the mechanics of the game, as well as an art team making assets for the game. But the scale of what needed to be done required augmenting that art team by bringing in contractors. They hired Rich's company Imagine This, along with a few others (Flying Rhino comes to mind), all of which were basically doing the same thing: build polygon models, animate characters and objects, and render background images. These assets would all be passed off to the development team to integrate into the game.

We started off with having scenes assigned to us; like scenes in a movie. It would be something like: “Papa Brickolini talks to the police officer in front of the police station.” So it would tell us which characters, where in the island environment, and then list the dialog. So we'd load in the characters into 3D Studio (this was a DOS-based application, I should point out), place them on the part of the island where they needed to be, then animate them according to a script. We had a .wav file with the actual voice dialog to play, but back then there was no way to play it with the animation in 3D Studio. So we'd

listen to the dialog, make notes on paper for where the key beats were, and then animate accordingly. I should also mention that it's really hard to make Lego characters expressive with their limited range of motion. The plan for the facial animation and lip-syncing was a pretty ingenious procedural system the developers had put together that would load a series of bitmaps for the Lego characters' faces based on what the .wav file was doing. In animation, these lip and facial poses are called phonemes, and artists built a library of phonemes for each character. But again, early on in production we had no way of seeing this in real time, so there was a tremendous amount of tedious guesswork involved.

Then a few months in, one of the main developers came up with a plan of giving us the tool they were using to convert all of the assets into useful data for the game. This was a Windows application they called “The Weaver,” that would take in the models and animation from 3D Studio (.3ds files), all of the necessary phonemes and texture maps, and then the .wav files of the dialog, then weave them all together into a proprietary format that the game engine would use. Now we all had a way to test out our animations to see if they worked. Prior to this, we'd all spend a week working on scenes, then bring the files up to Mindscape and offload them on a bunch of Zip disks, which would be run through the Weaver and checked for problems. At the time, the worst thing you could do was deliver a bunch of scenes you spent all week on, only to find out that the animations were out of sync with the dialog, or had geometry errors that broke the incredibly delicate game engine that was in constant development.

Having the Weaver to work with, at Imagine This we all jumped into high gear, busting out animations left and right, testing them out, then delivering them every Friday afternoon. We had a white board on the wall with everyone's name and assignments, and it became a major point of pride if you were meeting your deadlines. Extra kudos if you picked up the slack of someone else – it was very competitive, but in a friendly way.

Being totally new to the idea of realtime 3D engines and the way geometry and textures had to be made VERY efficiently was one of the biggest learning curves for just about everyone on our team. We learned how to very carefully make wheels for Lego trucks using carefully constructed octagons and smoothed normals. Careful attention had to be paid to each polygon, making sure to avoid intersections or coincident faces. Just about any error would cause the Weaver throw a big “fail” message, but over time we got really good at knowing the limits and being clever about maximizing what we could get away with. One artist would come up with a great trick, and then share it among the group. The friendly competition about half-way into the project would get not-so-friendly towards the other outside companies contracted to deliver assets like us. As a group, we ended up having a heated rivalry with Flying Rhino, actively trying to both deliver more content than them every Friday, as well as having fewer errors.

One of Flying Rhino's main artists was a guy who really rubbed us the wrong way. I thought he was super-arrogant because he would often brag about his stuff at the Friday deliveries at Mindscape. Things like “oh hey guys, I just delivered twenty animations – error free!” Towards the end of the project, Mindscape had asked a couple of us to work up at the company in Novato, making last minute changes to content on site, versus deliveries on Fridays. This Flying Rhino guy was up there on site with us too, working in the same room with us. We all worked with headphones most of the day, and he was the kind of guy who got really pissed off and vocal about things, and we could hear it through our headphones. One memorable day we hear him swearing through his headphones, yelling at his monitor as his scene data would crash the Weaver. He'd slam his mouse around and we would chuckle in the background. He complained very vocally that something was wrong but he couldn't figure out why. After wasting the day troubleshooting, the poor guy rebuilt his entire scene frantically but still failed to turn it over in time. This happened a couple times over the course of a week or so, and staff folks at Mindscape started having a

look at his 3D Studio scene files to see what was wrong. That's when someone discovered that there was a “geo-bomb” in his scenes. Someone had hopped onto his system while he'd stepped away, created a highly segmented sphere in the scene, placed it very far away from the origin, scaled it down so that it was so small that it wouldn't show up in the viewports, then named it something innocuous like “helper01.” We all laughed so hard, but still to this day I have no idea who did that?

The team of artists at Imagine This was pretty small, but we were all in the same boat, for the most part. For many of us, this was our first paying gig doing animation, and we were so hungry and passionate about the work and the opportunity to do something cool. The fact that it was a paying gig with almost secondary. We worked long hours, mostly without complaint. It was very much a bonding experience that reminded me of my early years in the Army. There was drama from time to time; a couple artists didn't work out so well, either just not gelling with the team or having trouble keeping up with the frenetic pace, and got the boot. Rich was a fearless leader, being a lead artist in a way because he had far more experience than any of us, and also running the business. But the loose, ad hoc aspect of his company lead to spots of tension sometimes, and the few times that our paychecks bounced, or when we found out he was billing us out to Mindscape at about twice what he was paying us, caused us to lose a bit of esprit d'corps. We were all really naive at the time, and understood zilch about how to run an animation company.

Back to the actual content for a minute. Towards the end, we were becoming very adept at pushing the game engine to its limits, while at the same time trying to be really clever and creative about it. The art director was a guy who'd come from Pixar (this is right after “Toy Story” had hit big) and he was really challenging us with his notes about trying to get more expression and emotion out of our character animations. I remember at one time frustratingly responding to him with: “Come on, Jim, these characters don't have elbows or knees and their necks only rotate on one axis!” But he also let us run with some crazy ideas towards the end. One in particular that I remember fondly was a scene the player was supposed to come across randomly when standing at an intersection. Two Lego cars would crash into each other, the parts and the two drivers would fly into the air in a cloud of spinning debris, then land all together, assembling into a new two-person vehicle that was a combination of the two previous vehicles. I was convinced we could pull this off, and went about pre-visualizing it with real physical Lego pieces first, because it was far too complicated to do in my head. My friend Kelly and I made two cars, put two characters in them, then took them apart piece by piece, writing down on paper where each would go. Then we tried to build a new third car from all of those parts. That part wasn't so difficult and putting the whole thing together in 3D Studio at this point took one long 16 hour day. But the next day neither of us could get it to run through the Weaver without breaking. It was just too much geometry for this novel game engine, so we tried rebuilding the vehicles with as few pieces as possible, then only the most simple pieces, but still it failed. And alas, that really cool idea never made it into the game.

Prior to work on Lego Island, I'd spent about six or nine months learning 3D Studio on my own. I showed up to work on the game feeling like I had a good handle on the software and found that I could do most tasks I was assigned. But really there was a huge difference between just tinkering on my own, versus working in actual animation production with a team of artists, all with deadlines and challenging tasks. I swear, I learned ten times as much in those six months on Lego Island than I did in all that time prior. In fact, one of the first tasks was creating a rendered image of the inside of the Police Station that would be used as a background for one of the menus. When you were inside of a structure, to save realtime rendering performance, we just had a stationary camera, a single rendered image as a background, then a 3D character and props would appear to interact with the player. Making that interior was challenging because this was the first time I was really exploring the process of lighting. It seems so trivial today, but

up until this point I'd mostly setup spotlights with default settings. Rich showed me how to create soft-edges with the lights, even changing the colors to create a hint of color bleed and bounce. I remember being so proud of myself for faking light cones in the interior of the Auto Shop or Mechanic Spot? It was all so new to me, and a big part of the learning process.

By the time the project was coming to an end, all of us at Imagine This – the ten or twelve artists, the production coordinators, everyone – had become a really tight, solid unit. We were cranking out content at light speed and loving every bit of it. A huge batch of requests and changes would come in some time in the morning and we'd have them all cranked out by the afternoon, unlike our fumbling and bumbling at the start of the project.

Then suddenly it was all over.

We were all technically independent contractors, so when it was over, there was no more work and therefore no more money. But we were so tight together and had so much fun. Who cares about money, right? Most of us decided to stay and work one some other ideas that might turn into work. Rich was frantically trying to bring in more work for us, but it never panned out. At some point in late 1996, I decided to leave. Kelly and I ended up working with another group of young, aspiring 3D Studio artists in nearby San Rafael. There was a new kid's TV show in development called “Vanpires” and small animation studios using 3D Studio MAX in the Bay Area were needed to help make the CG parts of the episodes. We ended up working on three or four episodes, and the guys who were still at Imagine This also ended up working on episodes of the same show, as well as Flying Rhino. Everyone was just chasing the work, something that honestly hasn't changed since.

Epilogue

Working on Lego Island was really the start of my animation career. It was a big break in a sense that it was my first paying gig, and one that I got to do something tangible on, and learn together with a group of similarly green artists. A couple years later, in 1998 I lucked into an even bigger break, getting to work on the shuttle launch sequence of the film “Armageddon,” which led to my first actual staff employee animation job at a small studio near San Luis Obispo.

On an ironic side note: the guy who discovered me and brought me in to work on this movie, Tommy Williamson, is now retired from the VFX industry, and has a business called Bricknerd that involves building Lego things!

This became a launching pad for working on movies for the next 17 years. I ended becoming an Effects Technical Director, which is just a fancy way of saying “I make fire/smoke/water in the computer,” and did it at places like Blur Studio, Digital Domain, CafeFX and Weta Digital. The required skill set for that role evolved into one that involved programming in C++ and Python, using fluid dynamics and rigid body solvers. I branched out into other 3D applications like Houdini and Maya, and at Weta worked closely with developers on the proprietary FX tools that we used on “The Hobbit” trilogy, as well as “Man of Steel” and “The Jungle Book.”

I did all of this as an Army veteran who taught himself 3D animation – no college whatsoever. And that last bit always bothered me. For some silly reason I had a complex about working with so many talented and highly educated artists, while I myself was a troglodyte with just a high school education. Oh and I

went back to part-time service in the Army in 2000, because after being out for a number of years I really missed jumping out of airplanes and hanging onto the side of helicopters. After 9/11, I found myself in a weird situation where my Army background and skillset was in high demand, so for the next six years I bounced between working on movies, and then doing soldier stuff. A deployment to Iraq in 2004-2005 really changed my life and I quickly found that deep seated passion for animation fading away quickly – it was becoming just a job to me. In 2014, while in New Zealand, I was diagnosed with stage 4 kidney cancer, which led to a two year roller coaster of a battle that forced me to quit the VFX industry and move home to the Bay Area to make a last stand or die. Thankfully, I bounced back and even though I'm still fighting cancer, I'm doing alright. I also decided this was a good time to put my GI Bill to use and finally go to college, in my late 40s mind you. I'm now a year and a half in to trying to get a degree in Theoretical Astrophysics. It's a long road full of mathematics, but a fun one.

I honestly don't miss animation, but I sure do miss the people.