

The Uncanny Valley Saloon

Inspiration:

I wasn't working from a single image, but more from my memory/imagination. I wrote a song titled, the "Uncanny Valley," which talks about our cultural moment: ai slop, the endless generation of stuff no one wants in pursuit of economic growth which is killing us and our planet. I decided to use this project as a stepping stone toward developing the world of the song visually. The idea was to have a robot band playing in an empty dancehall.

The Robots:

Curtis (the steel player): First I modeled the pedal steel playing robot. The song has a real person playing pedal steel on it: the incredible Curtis Clogston, who plays for Asleep at the Wheel and does production work as well. So I looked up photos of Curtis and kind of modeled the robot off of him. I modeled the Fender 1000 pedal steel guitar, because that's the one he was playing on the song. I modeled the painted metal shirt based on a shirt I saw Curtis wearing in one of his photos.

I was watching the Mandalorian with my kids and saw the part with the lava ferry. I thought the droid's arms looked cool so I used a bit of that visual language when I modeled the arms. The left hand has clunky big fingers, but they would work with the pedal steel bar. The right hand needs to be able to finger-pick the strings so it has detailed articulation.

The Drummer Bot: First I decided that the drummer bot should have a T.V. for a head with an LED screen with a tiny pixel count. I found an old 60's soviet T.V. for sale on eBay and took advantage of the fact that the seller had taken photos of it from every angle and just sort of had the browser open and modeled it. Then I used geometry nodes to make the LED screen. The bot's face should be pretty easy to animate using this node setup. I'm psyched.

I originally was imagining that I'd like to somehow get across Levon Helm's personality in the drumming: classical grip, big shrugging shoulders and eyebrows, passionate face, groovy as anyone ever. I ended up sort of basing the vibe on Animal from the Muppets, and Robby the Robot from *Forbidden Planet* (in the corrugated plastic tubing for arms). I also realized that I should give the drummer four arms so it can play more drums at once, so it has four arms. Maybe it has the personality of all the Pauls in *Children of Ruin*.

The Bass Player Bot: This one I knew from the get what it'd look like. The visual language is like a mashup of Count Binface (the U.K. politician), a praying mantis, and battle droids from Star Wars. I made it mostly green and lanky and gave it a big cylinder for a head. I also decided it needed to be grooving, so I gave it a flowing cape (cloth simulation and a wind force field), and posed it accordingly. He's only got the two fingers you need for playing bass on his right hand. His left hand just has a thumb and a fretting finger. Sufficient!

The Dancehall:



I looked up lots of images of dancehalls around Texas. I really liked the look of the dancehall at Coupland, Texas and mostly based the space off of it: the curtain at behind the stage (made using a cloth simulation), the shape of the stage and it's position, the dance floor between two eating areas, sectioned off with wooden railing, as well as the string lights, the patio lights, and the disco ball. I filled in a lot of what I couldn't see in the photo with my own knowledge of how these buildings are put together. I added beams and rafters and a corrugated metal ceiling.

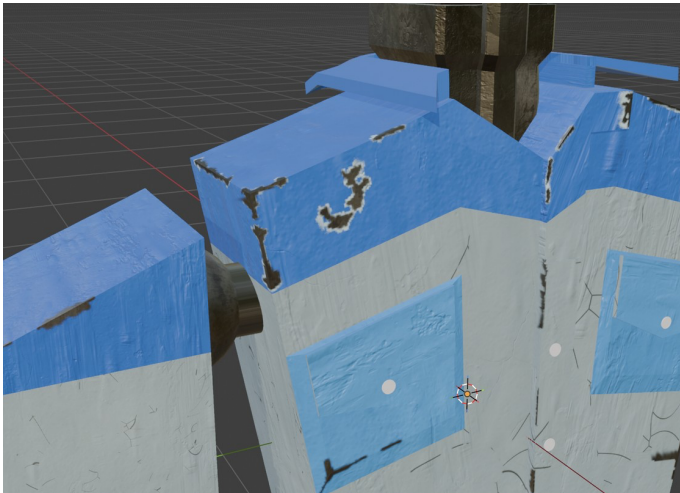
Texturing:

I spent weeks on the lookout for good textures in the real world. I took a lot of photos which I turned into photo textures as well as alpha brushes. The photo textures were for example photos of the weathered boards of wood on a dock which I used photomerge to turn into one image. I then was able to turn give every board of wood on this stage a different texture:



Because the wood from the dock was sun bleached the photos looked like they had been converted to grayscale. I added a noise texture driving the factor of a mix color node in order to mix brown tones into the wood. I adjusted the value and hue for each board in order to get it to feel “real.”

Another thing I used a lot of photos for was of any kind of weathering, wear or damage that I came across in the real world. I took these photos and turned them into alpha brushes so that I could texture paint damage, such as chipped paint on this robot:



In terms of composition, I thought a lot about wanting to give the feeling of emptiness. I want it to be clear that this robot band is playing for no one. At first I was trying to have a composition like this with the band across a long empty dance floor. The problem with this approach is that then the details of the band are lost, especially with the addition of volumetric haze. I eventually settled on having the stage in the first third of the image, and the empty dance floor in the other two thirds. I really wanted to keep the dance floor empty, but felt like the composition was lacking. I discovered that adding the road sign

and neon sign to the wall not only helped the composition, but also, and perhaps a bit counterintuitively, helped create a greater sense of emptiness. I modeled the neon sign by modeling a curve, giving it a transmissive texture for the glass, duplicating it and then placing an emissive texture inside for the glowing gas. The road sign is an image I made in GIMP after installing the Highway Gothic Font (which it turns out is the font used for all road signs)! I just added that image texture to a cube and stuck it on the wall.

Lighting:

Lighting was a doozy with this one. I tried to replicate all the diegetic lighting from the images I found. That is to say: almost all of the lights in the scene all come from sources you can see (I'll get to the one exception later). First the patio lights: I modeled these including the glass as a transmissive material and the filaments inside as emissive materials. I used curves to place the wires around the room and looked up the distance between lights and used that as a rough guide for placing the lights along the wire. The string lights are just a curve with a transmissive texture and a UV sphere with an emissive texture that is instanced on points using geometry nodes. The violet lights are more or less like what they look like in the reference image. I used the same logic for placement and wiring (and even added the hanger strap braces). The bulbs are emissive materials and then I placed area lights directly in front of the bulbs for greater control over the light. The spotlights are just spotlights, but because the volumetrics mean that you can see the beam, then I had to add an origin so that you could see where it was coming from so I modeled spotlights and their mounting systems.

There are some other lights that you cannot see. There is an HDRI at only 0.1 in order to give a little bit of warm ambient light to the whole scene. Additionally, I pointed a few spotlights at the disco ball in order to light it up a bit more. Because these lights were complicating the image due to the volumetric haze, I used light linking so that they would only effect the disco ball.

Finally, the disco ball. The disco ball itself was created using geometry nodes (following a tutorial linked below). I tried playing with a lot of settings in Cycles to get it to cast specks of light all over the room, but wasn't able to. I created a test file and blasted it with light. It lit up beautifully, but I couldn't get it to reflect light specks. This makes sense based on what we learned about how raytracing works in this class: the odds that a ray goes from the light into the disco ball is reflected into a random part of the scene and from there is reflected into the camera and gets sampled is minuscule! I decided to try something else. I tried taking a plane and giving it a Voronoi texture and playing with the alpha and placing that right up against a spotlight. The technique works pretty well and it occurred to me that I could use the same technique on a sphere and then placing a point light inside of it, but that led me to playing with textures directly on the light itself. I used a point light and went into the shader editor and gave it a Voronoi texture and then crunched it with a color ramp and sized it accordingly and viola: little specs of light everywhere.

Project Requirements:

I modeled everything except for the bass guitar and the snare drum and floor tom from scratch. I downloaded the bass guitar model to have something to design the bass player robot around and then ended up liking it and decided my time was better used in other areas so I kept it. I did the same thing with the drums, but then parts of the model were incomplete and I ended up having to model the bass drum, bass drum pedal, hi-hat, and hi-hat stand.

I UV unwrapped and textured everything as well. Some things mostly use PBR textures from ambientcg.com (even these are generally slightly modified with node editing), but most objects have some combination of photos I took and turned into textures and procedural shading. The advanced features used include cloth simulation, physics simulation, emissive textures, and volumetric haze.

Additional Images:

Variant A:



Variant B:



Resources/Tutorials:

Bass Guitar: <https://www.cgtrader.com/free-3d-models/sports/music/bass-guitar-6df87523-f20d-4647-8074-41dec8d85cd2>

Some of these Drums: <https://www.cgtrader.com/free-3d-models/sports/music/drums-36b843eb-14e9-4739-8eaa-19301cdbeee1>

Textures from ambientcg.com, polyhaven.com

HDRI from polyhaven.com

Disco Ball Tutorial: <https://www.youtube.com/watch?v=FRgE9mFzSfY&t=1013s>

LED Screen Tutorial: <https://www.youtube.com/watch?v=TYD-CRDGXI&t=704s>