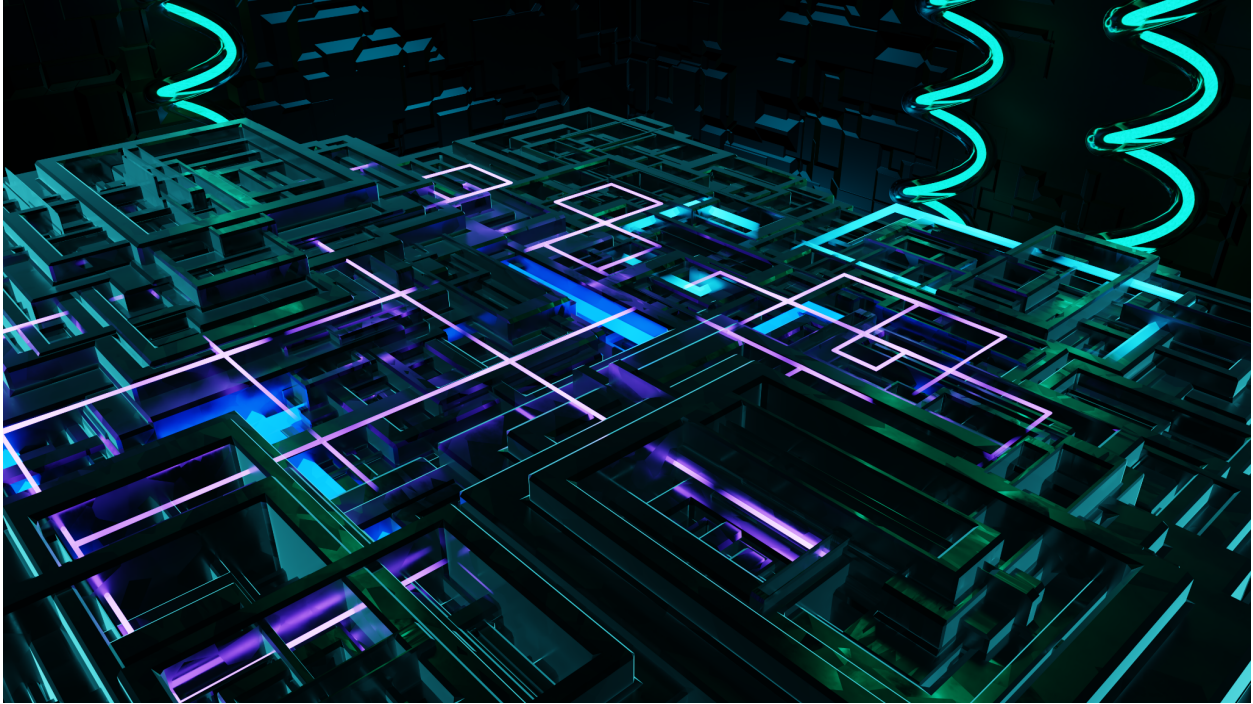


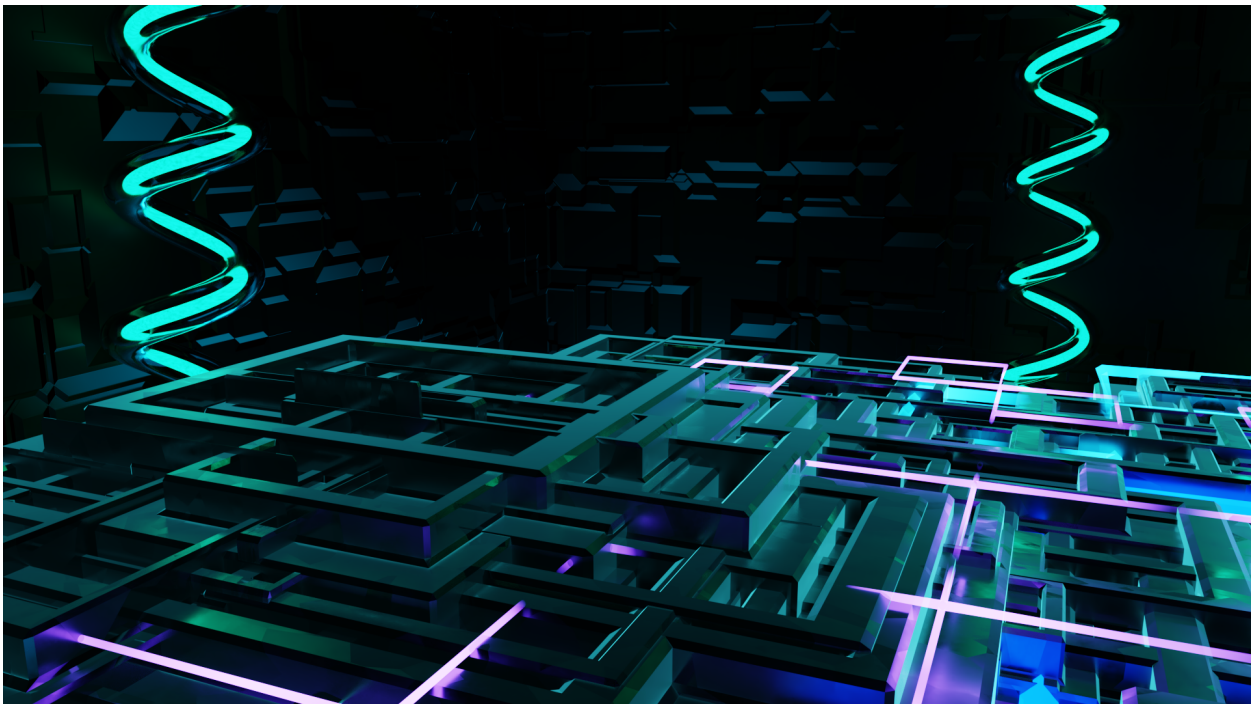
CS148 Final Project Writeup

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Track: Blender Cycles

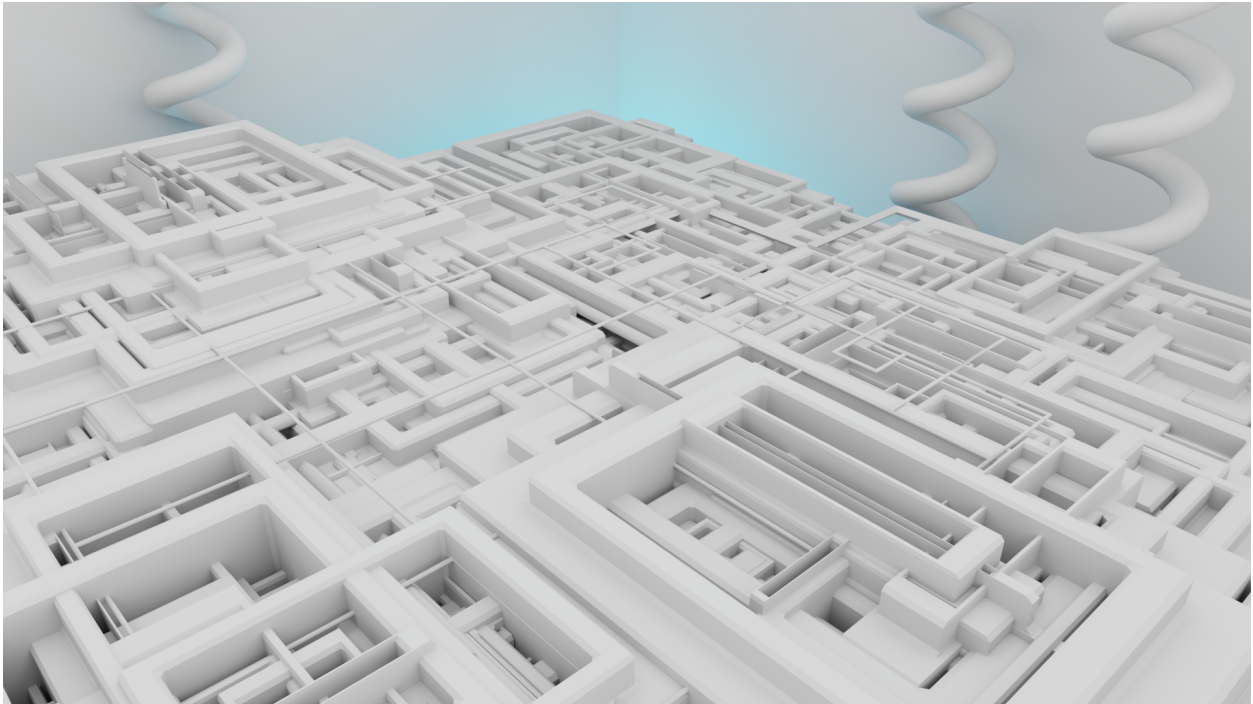
Final Image:



Variant A:

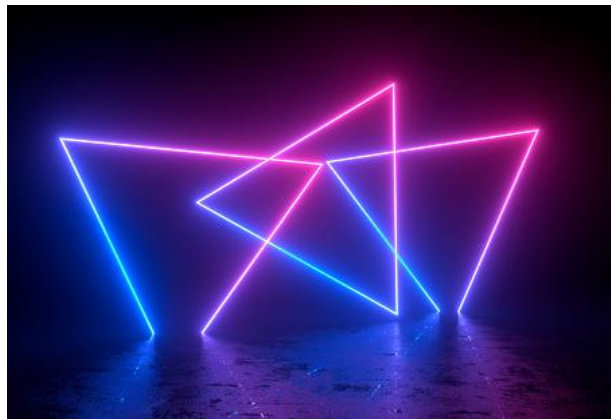
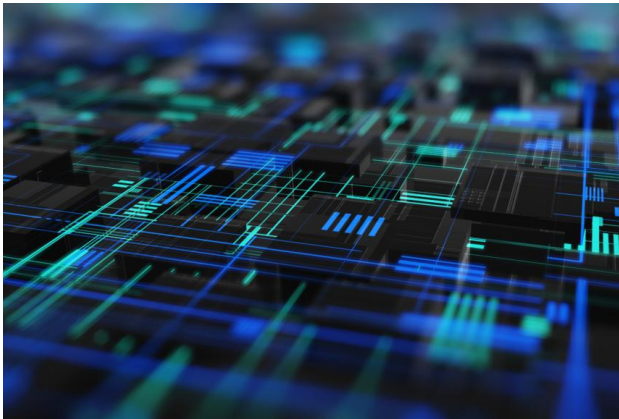


Variant B:



Inspirations/Contributions:

The primary inspiration for this image came from two things: high-tech/sci-fi concepts with abstract but rigid/geometric forms, as well as combining different colors of neon lighting to light a scene. Examples of these two things can be shown in the images below:

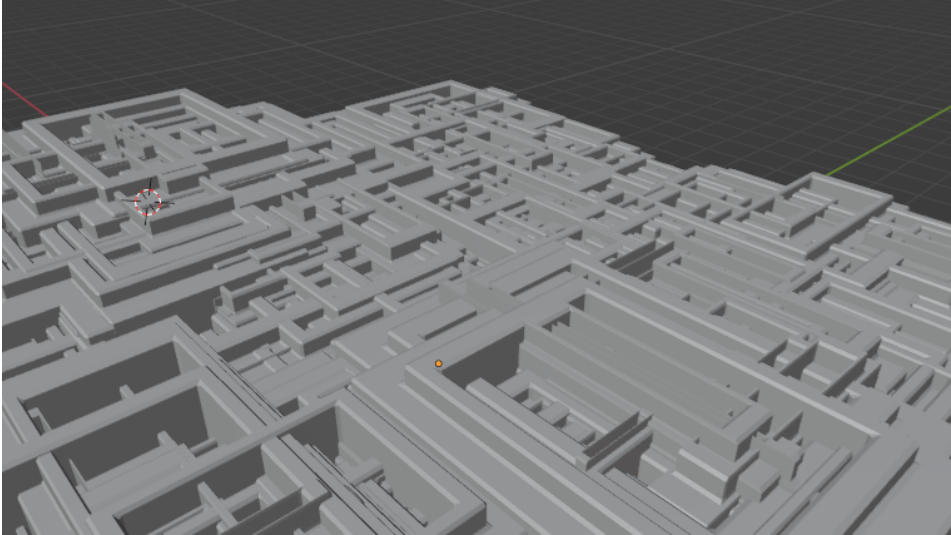


Originally I wanted to place these things within the context of a more realistic setting like a desktop setup with a computer/keyboard, but I found difficulty in making the scene feel natural, so I tried to fully lean into the more abstract elements. For contributions, I did everything in this project by myself.

Assets:

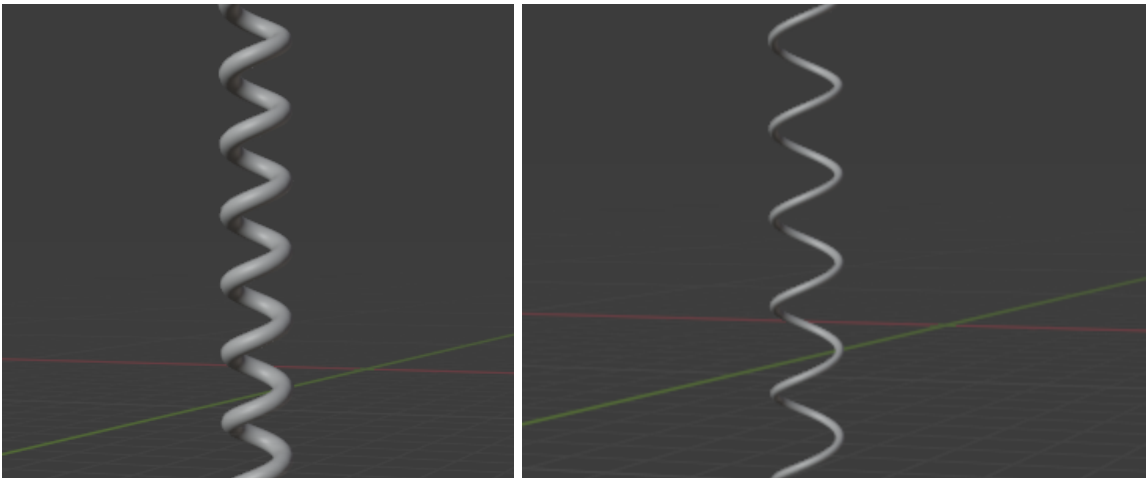
All of the assets within this scene I modeled myself, which meets the custom geometry requirement. These include:

- The abstract box in the foreground of the scene



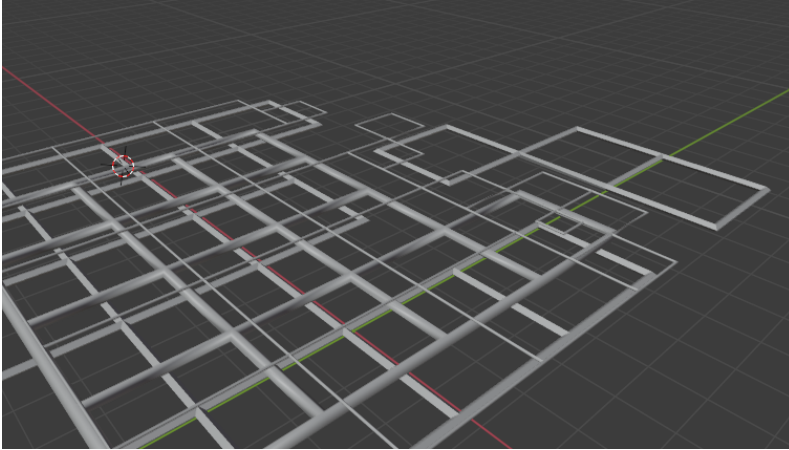
This was created using a plane which I subdivided and displaced using the cloud noise texture, then used geometry nodes to procedurally generate a randomly sized lego-like cube model at each subdivision.

- The spiraling neon lights



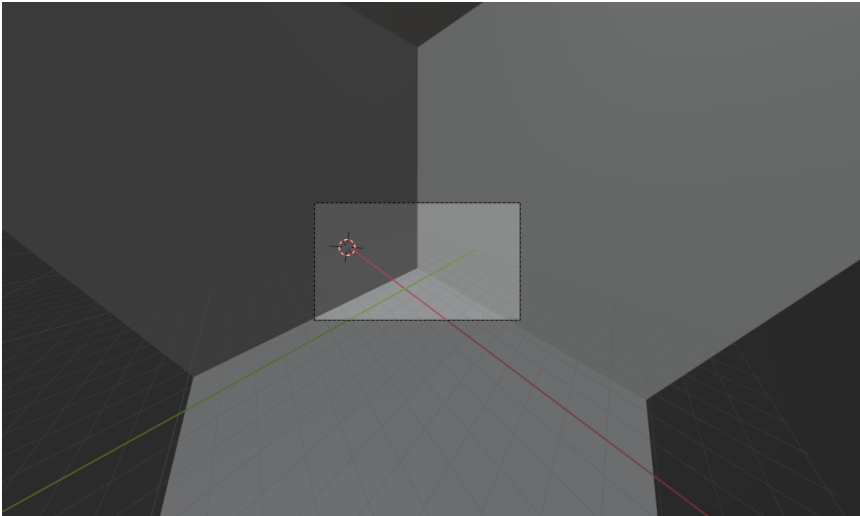
These were created by creating two screws (circles w/ the screw modifier), with a smaller screw inside the larger one, the larger one acting as the glass casing and the smaller one acting as the light source.

- The neon lights that cut through the box in the foreground



These were created by subdividing a plane then adding a wireframe modifier to it, then deleting out certain faces in the subdivision so the lights would not just be a grid. Multiple planes of this were stacked together to create different lights

- The background box that encapsulates the entire scene



This was simply a large cube with a face removed at the entrance.

Texturing / Materials:

For texturing, I used various combinations of different materials and shaders to achieve the desired look. All of my textures were generated using shading nodes, and I did not need to import in any texture images. Both textures I created were procedural in nature and meet texture from scratch and non-shader nodes requirements.

- Abstract Box:

I applied a slight metallic texture to the base cube construction, with a mix shader combining voronoi and noise texture to create divisions along the cube that had differing levels of roughness.



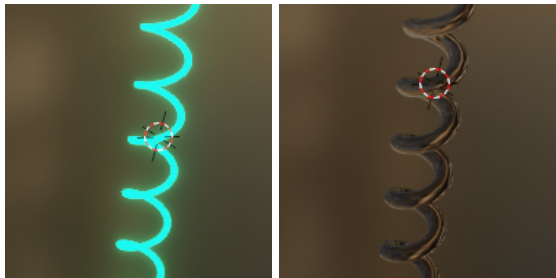
(noise texture)

(voronoi texture)

(both combined)

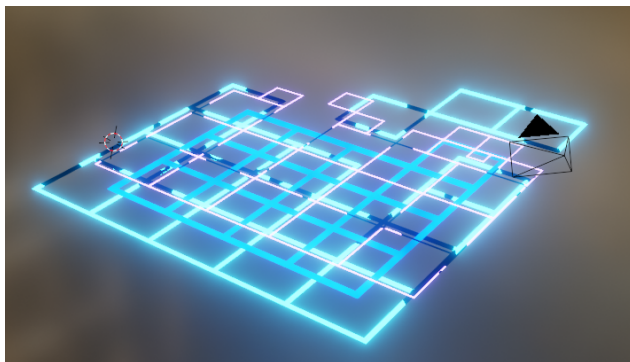
- Spiral Neon Lights:

For the inner spiral I utilized a light-green emission with a strength of 11, and for the outer spiral I utilized a glass BSDF with a roughness of 0.129 and an IOR of 1.1.



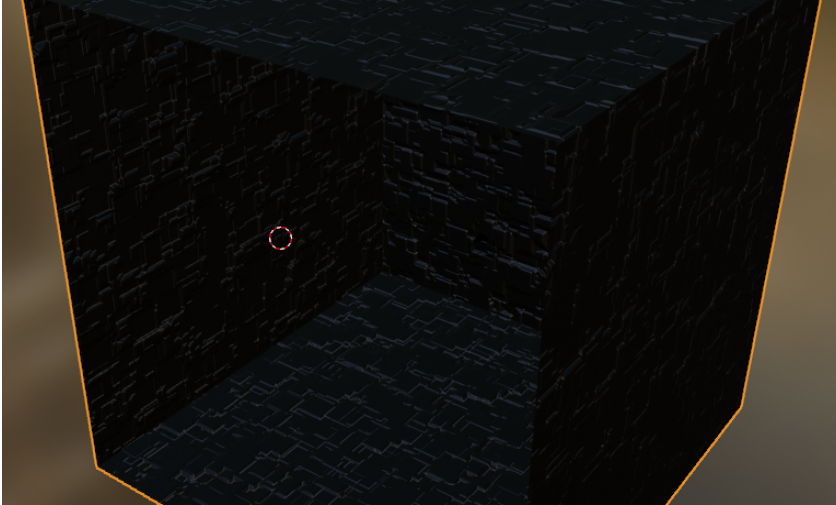
- Wireframe Neon Lights:

For the wireframe lights I used a mix shader to combine a transparent BSDF and an emission of various colors to have lights that would change in strength and go transparent at certain parts. The transparent sections were determined by a noise texture and color ramp.



- Background Cube:

For the final background cube I utilized a metallic surface with bump nodes connected to a voronoi texture and a color ramp to create a geometric randomized bumpy pattern.



Blender/Cycles Features:

I utilized denoising in the render of the final image to remove a lot of the grainy specks of light coming from the various neon light sources.

Referenced Documents/Videos:

- Procedural Geometry Creation ([link](#))
- Metallic Textures ([link](#))
- Spiral ([link](#))