Creative Making: Adv. Visualisations & Computational Env.

Final Project - Personal Write-up

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20040127

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SoulNet

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SoulNet is a critical exploration of the relationship between our engagement with virtual worlds and our physical freedom. The interactive installation stages a fictional demo set in the near future, asking us to consider which parts of our physical reality are we willing to give up in order to experience a promised virtual paradise.

Created By:

Adam Cole | Alexandre Tarek | Lea Ho | Lexin Zhou | Orsolya Szantho | Sali Mallat | Sixiong Sheng

My Part Only / Github Repo

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https://github.com/s-mallat/AdvEnvironments_SoulNet_FinalProject

Video Link

https://www.youtube.com/watch?v=XkymM3IcORg

Code / Project Files Repo

https://github.com/adamdavidcole/unreal-free-float-game

My Contribution (1/3)

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For the final iteration of this installation, I was involved in both the physical and the virtual development. To start with the unreal part of the project, I was responsible for creating the graphics and overall design of the game. I created the materials, particle systems, modeled the game objects and animated them in Blender.

The challenge of creating the graphics & effects was achieving a design that is impressive enough to keep the user engaged, even addicted to the gameplay. The user engagement was a very important factor through out the decision making process of putting the graphics together and what kind of mood and vibe the game communicated. This is because the installation forces users to position themselves in awkward and uncomfortable body positions to play and interact with the virtual game. Therefore, the actual gameplay needed to be powerful and smooth to keep them playing and engaged. In other words, it was a situation of whether or not the user is willing to give up comfort to keep playing and make more pretty graphics. From the response we had at the show, the answer is yes, most people are more than willing to give up comfort and restrain their movements to keep exploring the virtual world.

As our game had only one camera angle, I wanted to add a layer dimensionality to an otherwise flat two-dimensional world. To delve slightly deeper into the technical side of things, I would say the biggest game changer for the graphics of the game was the introduction of the dynamic trail or the dynamic ribbon system. Through various iterations & after numerous tutorials on particle systems, creating and merging materials, I was able to create dynamic materials that animate overtime to avoid a static and flat look. The trail is an example of that dimensionality & dynamic design as it is constantly shifting, animating, and gracefully flowing around the space the longer the user engages with the installation.

The creation of all materials and particle systems consisted of a rigirous process of layering different

My Contribution (2/3)

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textures, materials on top of other materials, and merging multiple particle systems to create the effects needed. The challenge in this part was twofolds, the first was the memory issues & making sure that the overall project files don't exceed a certain size since this is a multi-faceded project with many layers. This was an issue for us because all team members owned macbooks with exception to one person who operated a windows machine. Furthermore, the memory restraint affected my decisions on what kind of game objects to model, how many faces and vertices they have and how to best animate them in Blender.

The second challenge was getting the files to load and compile correctly on different machines. I originally used many materials from the epic games marketplace but quickly had to remove all of them and replace them with starter content textures and build my own materials on top of them to make the migration process smoother and avoid running into issues later on.

Moving on to the physical part of the installation, I was responsible for designing and building the hand stations, as well as designing the structure of the wiring from laptop and projector to six different stations. The overall design of the stations went through different iteratives stages while building upon the idea of affordances and the relationship between the stations and the users, as well as how effective the physical design is at communicating the project goals.

The elements of the stations were created using plywood carved out using the laser cutter and the hemispheres created through 3D printing. The decision to make the stations close to the group in terms of height was made for conceptual and practical reasons. I envisioned the stations as flexible pieces that we can easily move around to accommodate the small space at the show, and with the limited budget and resources we had, the decision to make short stations was a more logical one and added more to the conceptual aspect of giving up comfort for virtual exploration. The simple

My Contribution (3/3)

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choice of making shorter stations is one example of many of the thought process behind the design. This is because we needed the users to understand that these are hand stations not foot station for instance. Therefore we added five different touch points instead of a singular big one inside the hemispheres to lead the user to bend over and use their hands to activate the installation. Creating the stations & having to design where each wires goes and through where, made me think and appreciate the effort that goes into creating so many cool gadgets around us where we don't even see the inner workings or wiring. Lastly, the conceptual storyline for the project needed to be narrated in element of the project from the virtual to the physical part. Therefore, the end-result is sleek futuristic design that affords the user to position themselves awkwardly to gain access to the virtual promise of immersion and freedom.

Lastly, I would like to reiterate and highlight the efforts of every member in making this project happen. Beyond my tasks and this applies to each one of us, we all helped each other and contributed in the decision making, conceptual development, assembling the work and transporting it (on foot, since they wouldn't let us on any bus with huge wooden boards and boxes) from CCI to the exhibition space.

My Process

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Unreal Development - Activation - Movement

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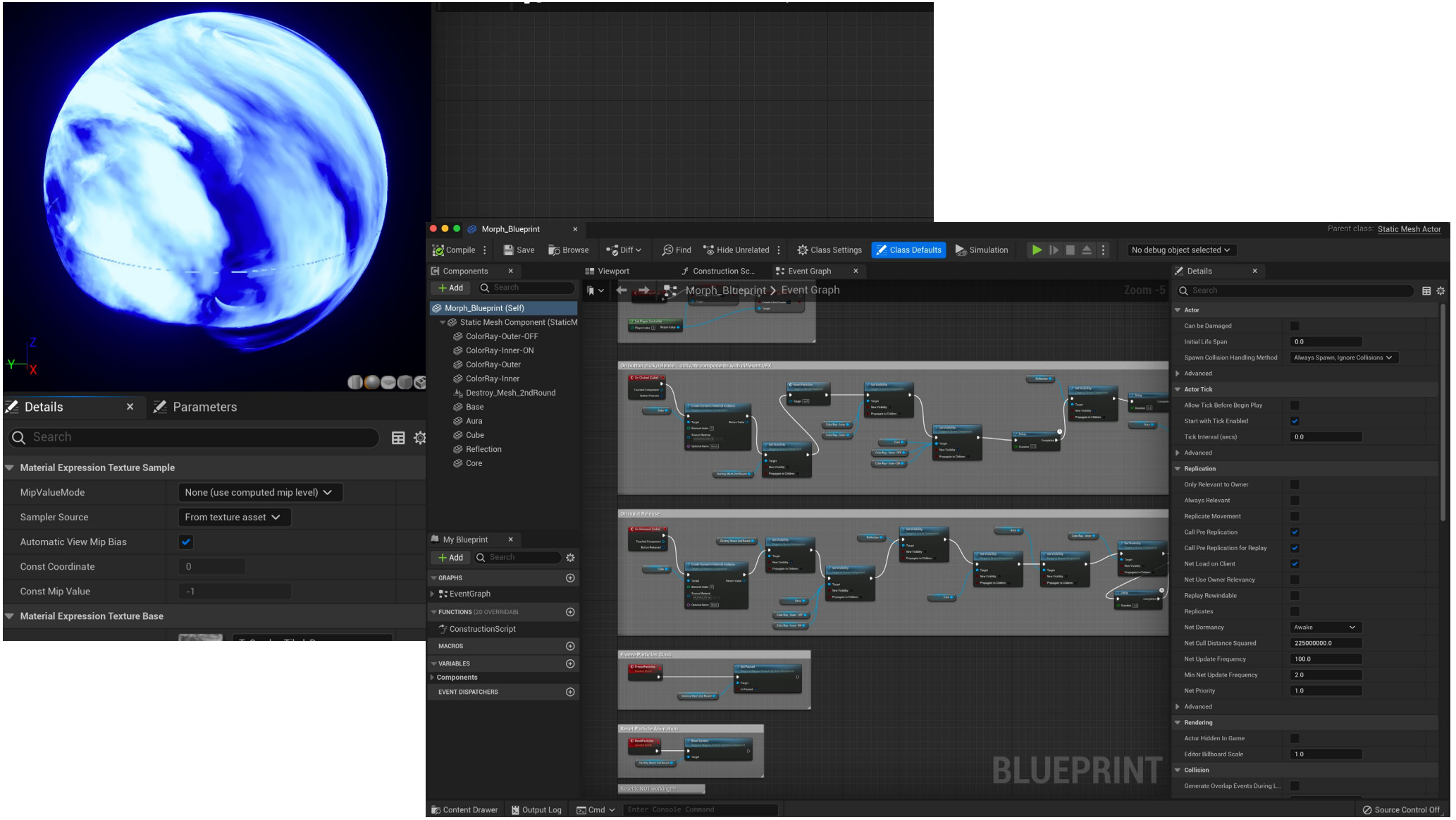

Unreal Development - Deactivation - Particle Systems

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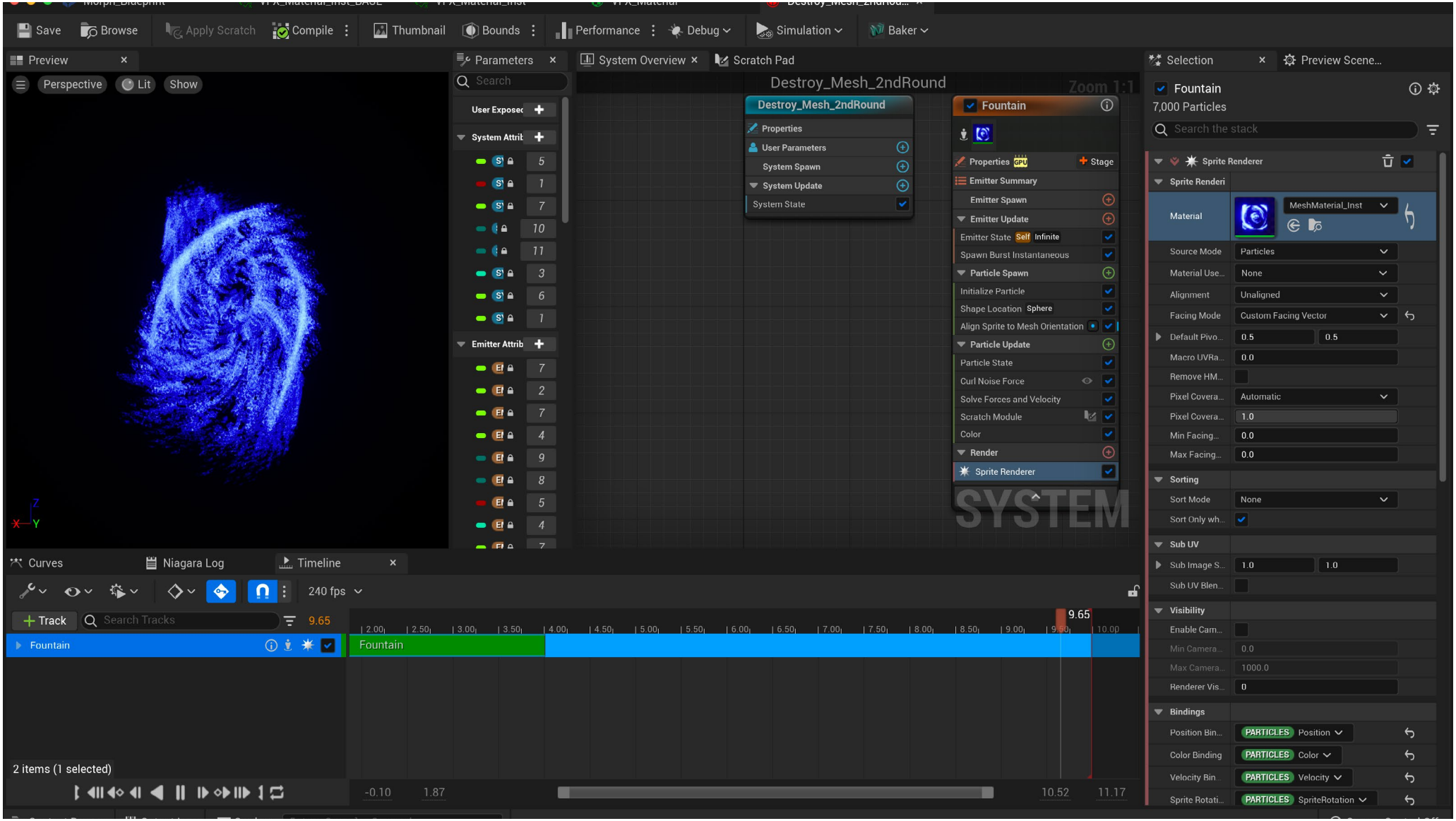

Unreal Development - Materials - Audio Explorations

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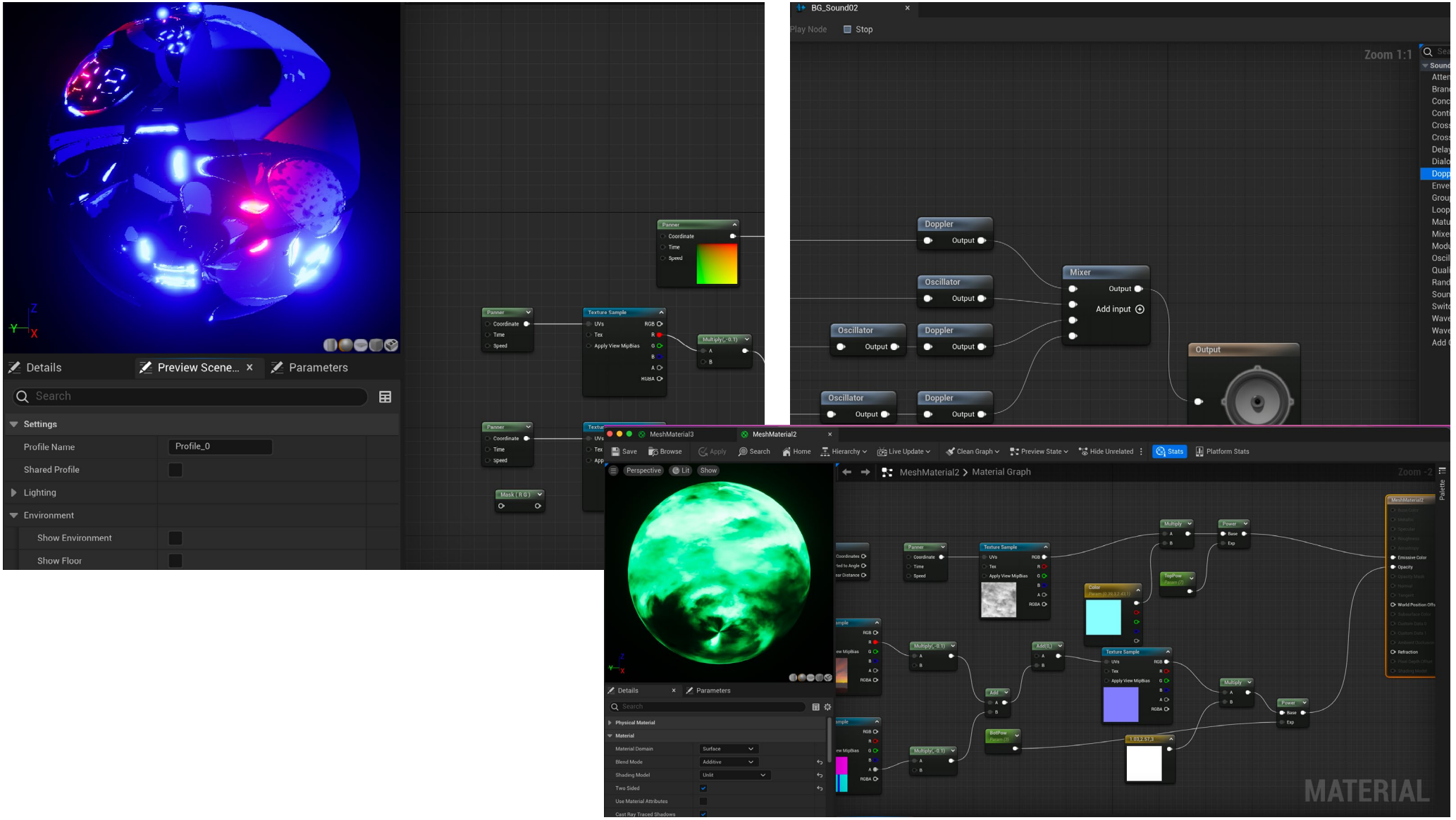

Physical Design Exploration

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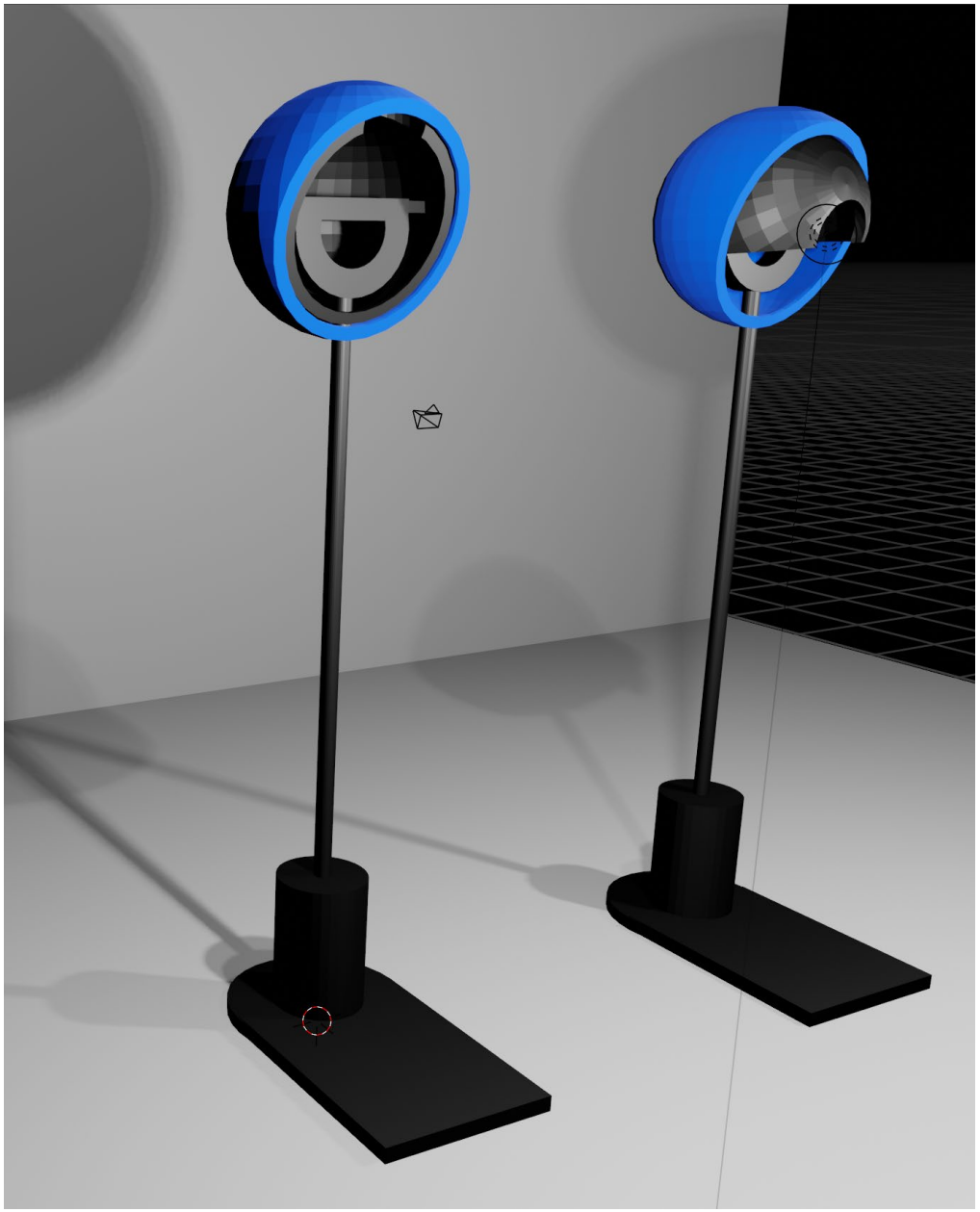

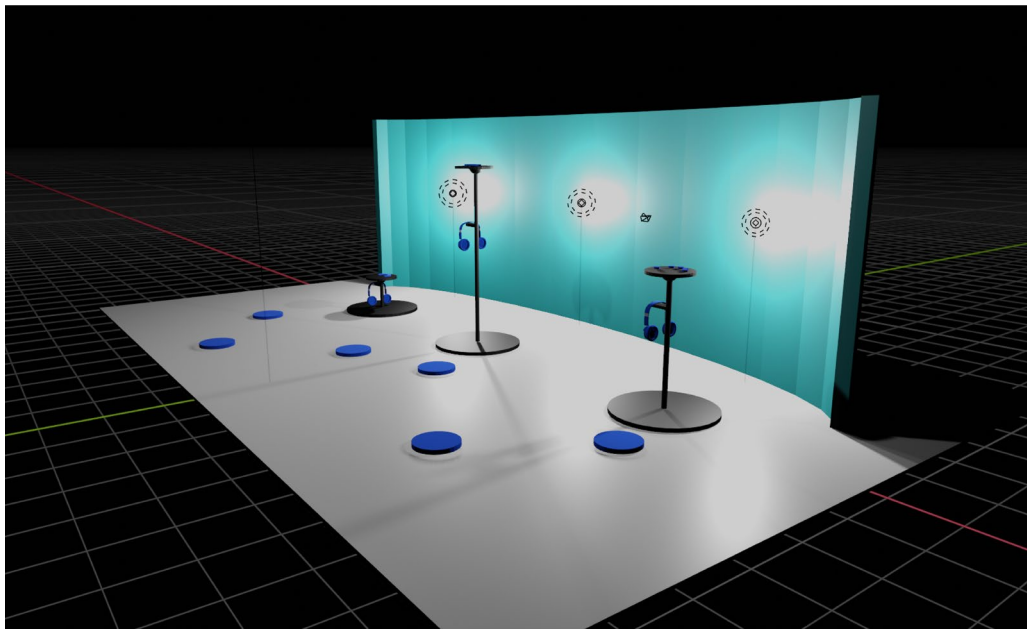

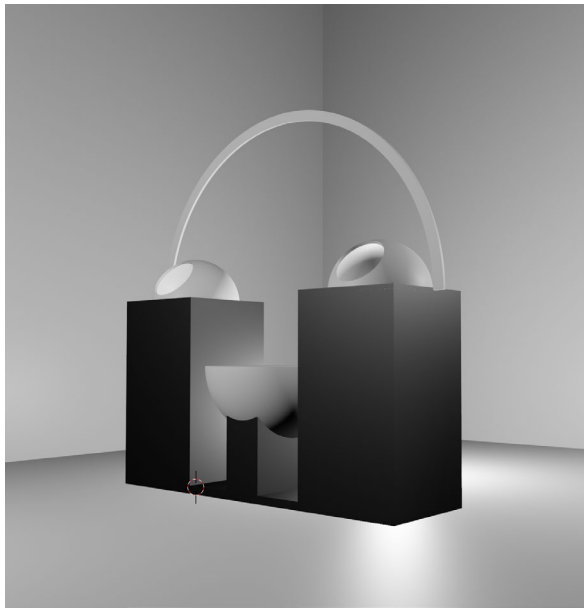

Final Station Design

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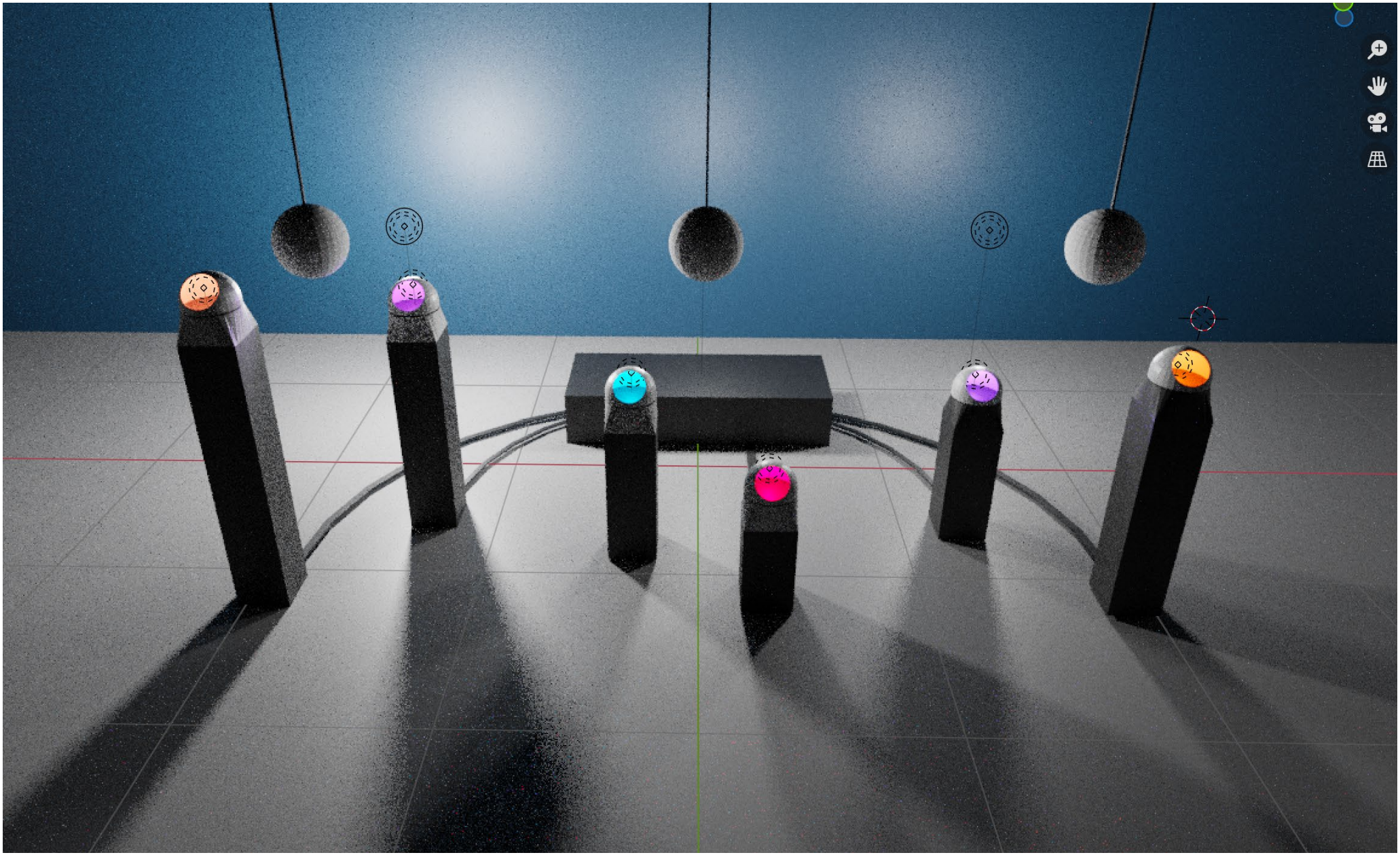

Prototyping Station + Helmet

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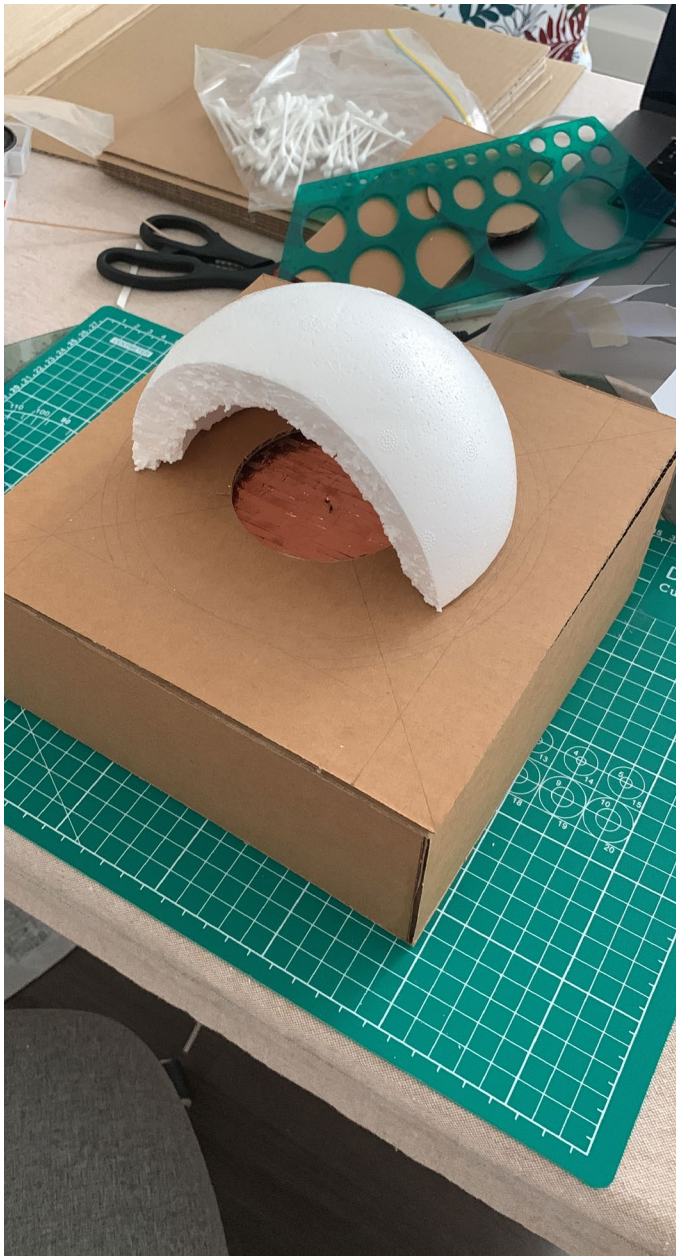

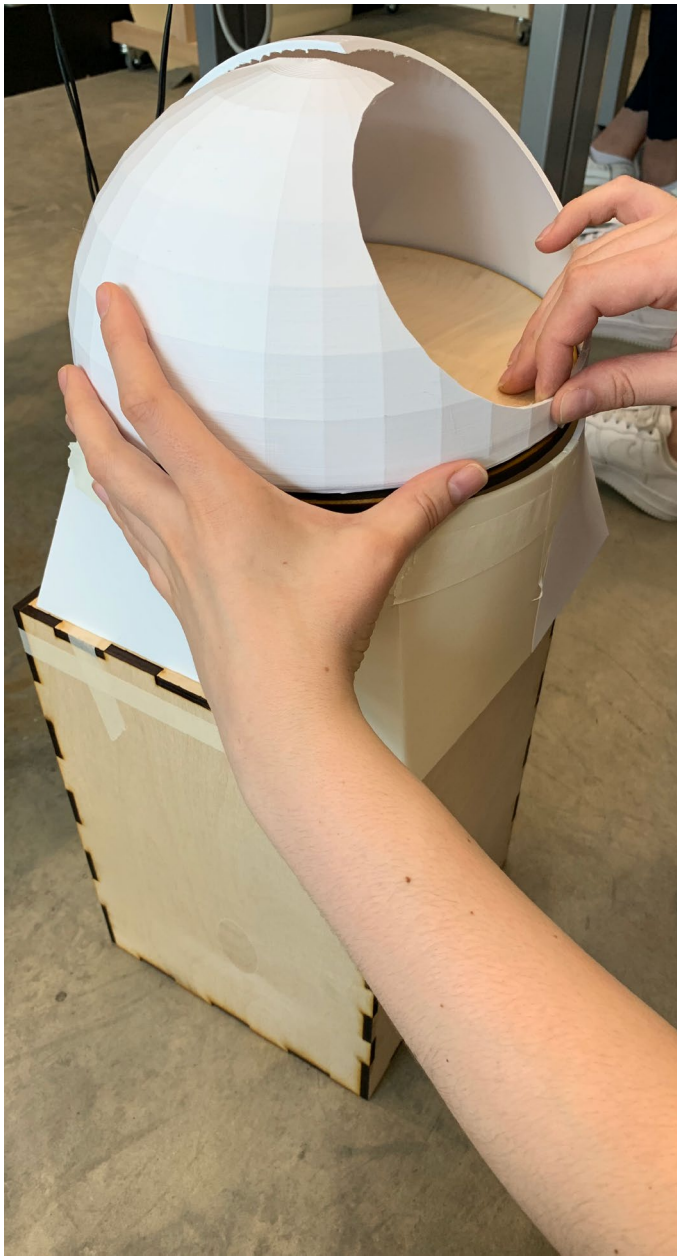

Printing

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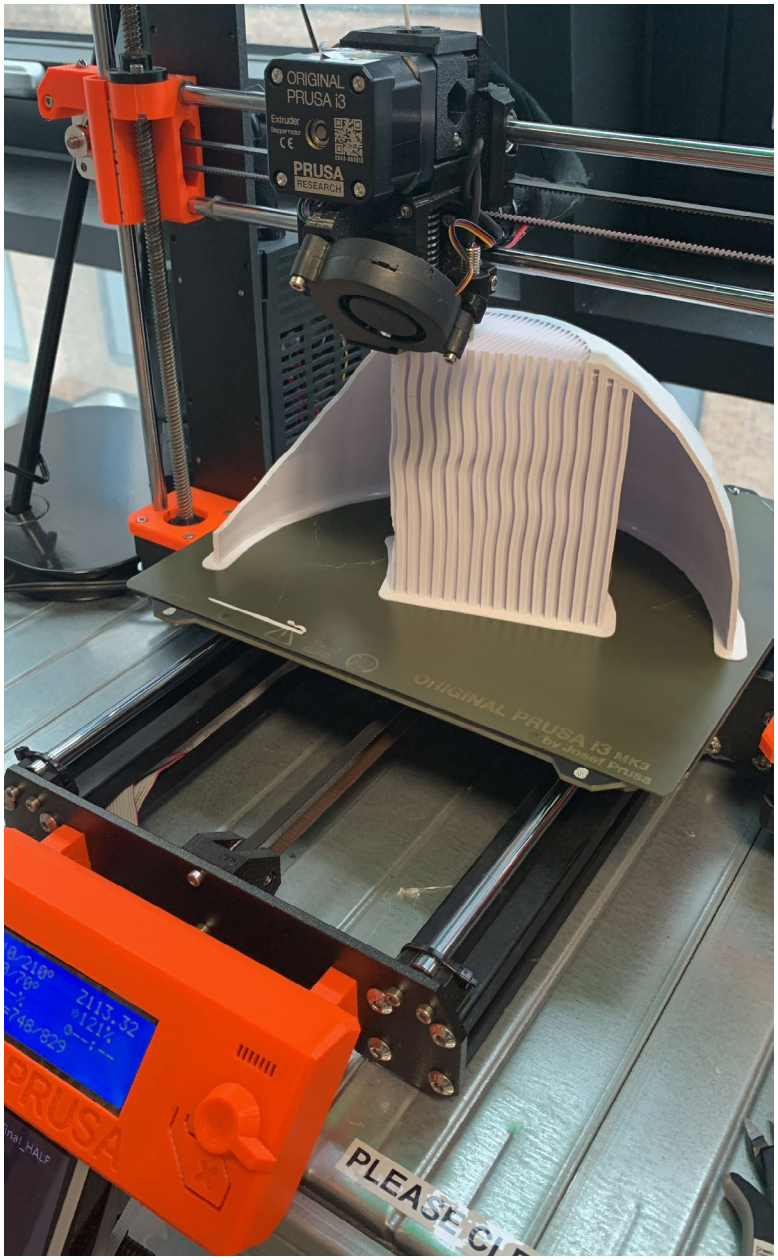

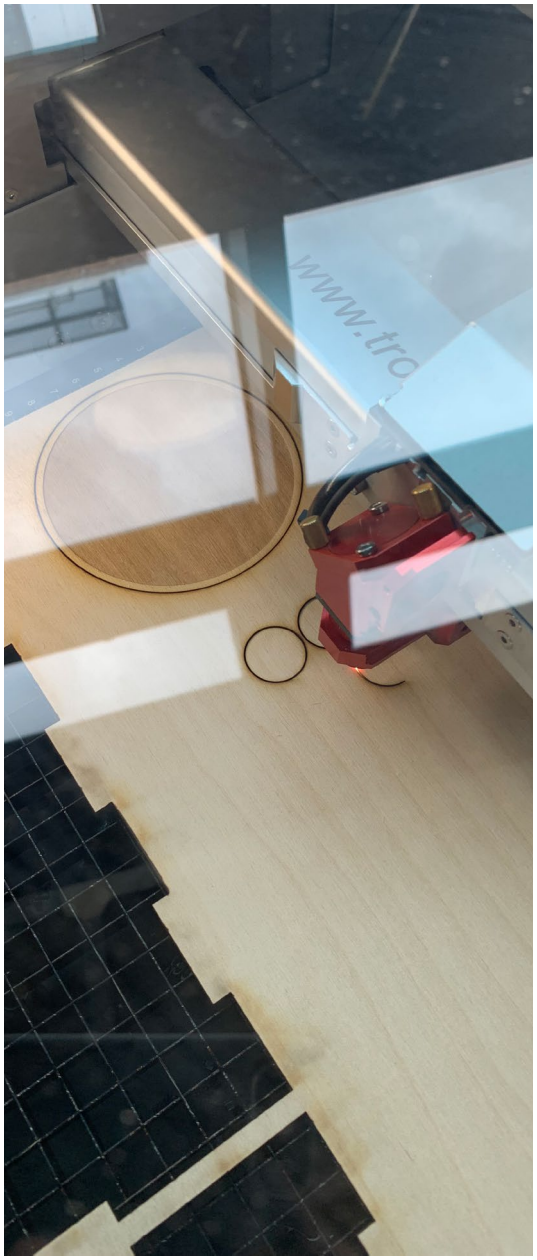

Building

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Wiring

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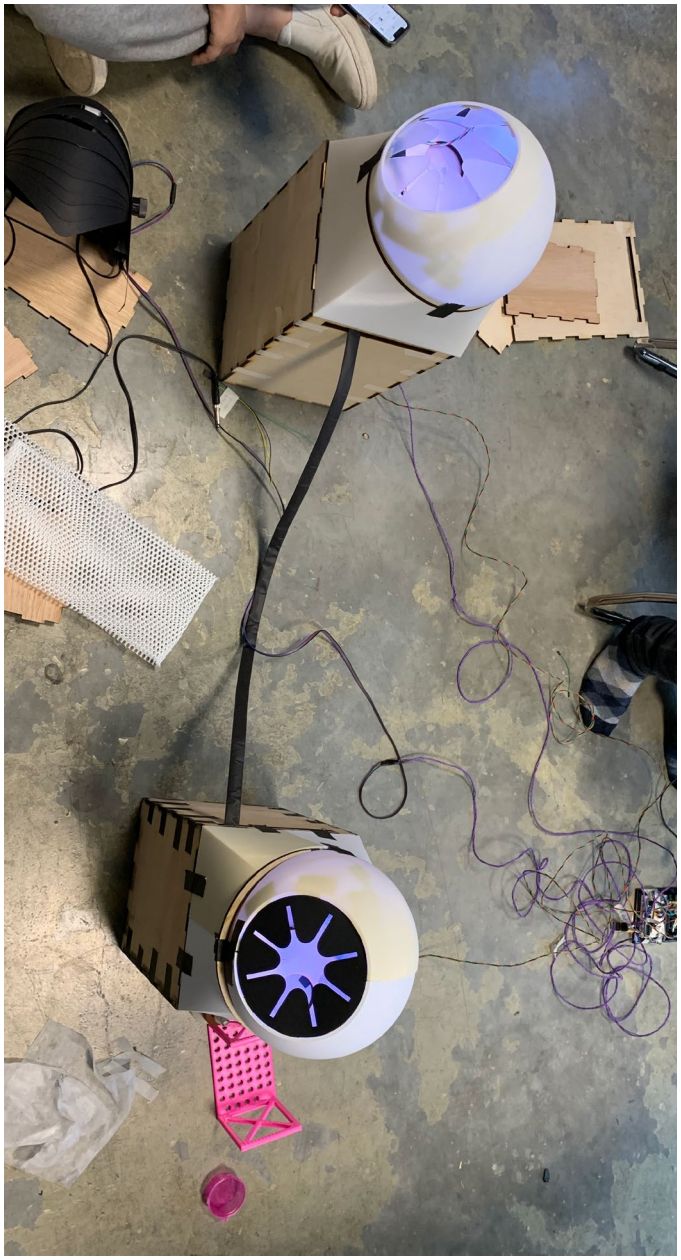

Testing

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The Show!

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Final Thoughts

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All the work created in this project was created collectively as a team effort. Even within individual tasks, there was always feedback, help, and contribution from other members. A lot of the work done was created through building on top of each others' ideas and work. Therefore, this installation wouldn't have happened without each and every member's effort and hardwork.

I'm glad that we were able to exhibit the work at the show to receive feedback from people and seeing others enjoy interacting with our installation.

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