

FINAL PROJECT DOCUMENTATION

DESCRIPTION

My final product looks nothing like the initial proposal I posted on the blog a while ago. That idea fell through, but I took some of the same sentiments I wished to express in that project and transferred them into this new direction.

Instead of making a wall mounted visually stimulating and interactive piece, I turned it sideways into a podium configuration, also allowing for the more discreet integration of the projector.

The project is centered around a reactive animation coded in processing, displayed on a constantly expanding and contracting projection screen that emulates the formal language used in the animation.

IMPLEMENTATION

The way I went about this was through using both processing and Arduino to control different aspects of the piece. Processing was the interface between the leap motion controller and the projection. I took the vector data from the leap motion, using the library for processing this was quite straightforward. I then used these vectors to generate 3d geometry around the joint locations.

To create the screen I took a sheet of translucent plastic, and scored it in a pattern inspired by an origami lamp shade, then creased it and attached it to the base so it had a natural tension upwards. I attached strings, routed them around pulleys to get the correct angle, and then attached them to servos on a sweep timer to create the breathing effect.

PROCESS

The first thing I developed was the processing sketch with the leap motion. This wasn't super difficult, as the library for the leap motion is well documented and straightforward to use. I also found some inspiration in a project online generating similar shapes in an animation.

I then went about considering how to display this information in an interesting and physical way. I wanted to make the projection seem volumetric, and so was looking for a 3 dimensional way to project, and ideally an interactive surface.

I tried some different things, projecting onto strings, and onto liquids, but eventually settled for translucent plastic as it was adequately flexible, as well as allowing for rear projection.

I then went about finding a form, and developed a shape using the same geometric language from the animation. Following that, I created a base, and developed a way to make the surface move in a subtle, but engaging way.

REFLECTION

Overall, I'm pretty happy with how this came together. It was a last-minute design shift, and thankfully I was able to pull it off. The only aspect I wish I would have been able to include, was a pacing of the breath of the projection surface based on an environmental characteristic, such as ambient volume.

Craft wise, I think I could have put more thought into the design of the base, but as it stands it is functional and relatively clean.

I appreciated using this project to learn about processing, and a more sophisticated motion controller.

RESOURCES

- 4x6 ft. MDF
- 3x4 ft. translucent plastic
- 1 leap motion controller & cable
- 2 hobby servos
- 1 arduino uno
- 1 pico projector
- Fishing line @ pivots
- 1 pc running processing
- Hot glue
- 6sq in white acrylic