

OVERVIEW

The initial intention behind this project was to build a piece around an out-of-service kid's play area with water jets, giving it back a feeling of life and playfulness by using arduino to make an interactive installation. My initial focus went towards sound, which I initially wanted to be the main feature of my installation. The idea eventually evolved into a VR experience that attempts to tie together gestural elements related to the water jets, a multi-user play experience and a virtual environment that references the initial place of interest. A user wearing a VR headset can play around with a water jet, attempting to shoot it towards the place where another user stands, who can also direct his jet towards the user wearing the headset. The headset user gets to view the scene through the headset and experience the sound through headphones, while the other user can watch on screen and receives feedback a sense response - wind and sound. The sound aspect created at the beginning of the process remains in the piece, as a secondary feature generative ambient sound.

PROCESS

As mentioned above, I set up attempting to create an interactive installation centered around sound. The idea was to capture some of the materiality of the place by bringing in percussive sounds created in the environment itself using servo motors. This was a first step that included learning to work with Max MSP and Arduino. After achieving certain results, added distance sensors to capture user inputs, and discussing with Elio and Sabine, another direction for the project was elaborated - to explore use of VR in communicating something about the space which was referenced. From there the work was more centered around getting different parts to communicate, and towards building placeholder pieces for the 3d environment, as well as some preliminary particle effects to be used in the scene. I added motors to the piece in order to give some kind of tactile feedback, to some success, however my use of them seems to be inconsistent so far. With many different pieces on my hand, the rest of the work centered around adding the parts together to form a coherent whole. From there the idea of allowing a second user to interact through sensors as well was elaborated.

INSIGHT AND FUTURE DEVELOPMENTS

This project has been a rather long journey, and has certainly taken many turns along the way. While it is at this point only linked to the original idea through the theme of fountains, and a somewhat distance visual reference to the place itself, the project has taken interesting directions which the original space on its own wasn't enough to inspire. Now that this project is coming to a close, there is something that can be said about the difficulty of conceiving objects with parts you don't know much about. Nonetheless, there is something exciting too about adding new elements to a project without knowing well what direction it could take. At this point there is much testing to be done in this project I think: to me, it seems like I have found a structure and perhaps some grounds for how an interaction could take place under this scrutiny, but there is still little foundation to how exactly that interaction is shaped. I have parts communicating well and systems in place, but in the future this piece could be much more refined in many ways. Examples are the mapping of the sensor data to produce controls for the particle systems inside the game, or the efficiency and positioning of the motors I use to give tactile feedback. There is also another layer of work in this context, which is the rendering of the particle system that makes up the fountain, which could be refined and honed to appear more realistic, especially while it is

being manipulated by the user. There is obviously very little that is done so far in terms of design - the design of the physical objects as well as the contents of the unity scene have ample room to be updated. As for the system itself, I think as a basic idea, having users interact with each other across the curtain of the vr headset, innocently splashing water at each other is a nice enough basic idea in itself. It would be interesting however to expand this interaction in order to emphasize play. There could be other sensors to use, and other kinds of motion to bring into play which could be interesting. This would likely best be done by prototyping some more and testing with different individuals. There might also be a better way to give tactile feedback to the user without relying on motors, as the sensation of wind is still a good leap of faith away from feeling like water. Lastly, now that many pieces are working and a basic concept idea has finally sprouted, it would be interesting to iterate more with the place which inspired the piece itself in mind.

VIDEO OF THE WORK

<https://youtu.be/7oNGgDCRBSs>

<https://youtu.be/cXSJe6-rydw>

<https://youtu.be/jBjWAXMG1hk>

GITHUB

https://github.com/miwamiwa/CART-360/tree/master/ThisThenThat_Artifact

EXAMPLES USED

motor example

<https://www.oddwires.com/using-a-mosfet-to-control-a-dc-motor/>

max to arduino tutorial

<https://www.youtube.com/watch?v=68L-WHh3Ows>

<https://www.youtube.com/watch?v=6bT3G4Mep7E>

max+unity+osc script and example

<https://thomasfredericks.github.io/UnityOSC/>

motors and h-bridge example

<https://www.youtube.com/watch?v=Da4HY7HZ6h0>

ultrasonic sensor without delay example

[https://codebender.cc/sketch:326428#Ultrasonic%20Sensor%20Without%20delay\(\).ino](https://codebender.cc/sketch:326428#Ultrasonic%20Sensor%20Without%20delay().ino)

unity fountain particle effect

<https://www.youtube.com/watch?v=C0yiE4Xh-OQ>

