

Motivation

- Removes necessity of physical screens to save space
- Physical screens are limited to 2D images, whereas an air stream can provide more depth
- Only expensive forms of holographic displays currently exist

OBJECTIVE

- Portable 3D-projection onto compressed fog
- Interface that allows user interaction

Development Environment

HARDWARE

- Raspberry Pi
- Mouse

SOFTWARE

- OpenGL ES
- SDL 1.2

PROJECTOR

- Humidifier
- Push fans
- Polypropylene honeycomb







aether

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Results

- Produced a 3D projection onto compressed fog that allows user interaction through a mouse
- Achieved goals
 - Depth is shown during projection
 - Minimal delay from user input to projector's output
- Limitations
 - Limited viewing angle
 - Better in certain lighting conditions
 - Water leakage from fan



Architecture

ARCHITECTURE WALKTHROUGH

- User interaction with mouse detected through handler
- Program on Raspberry Pi run with OpenGL ES to generate view of model
- Display sent to projector through HDMI connection
- Display shown on fog, which also creates a 3D environment for the model

Obstacles

- Original goal: Allow user to interact with gestures (Kinect + BeagleBoard)
 - OpenNI version compatibility
 - Limited libraries and functionality with Beagleboard

Meet the Team







