

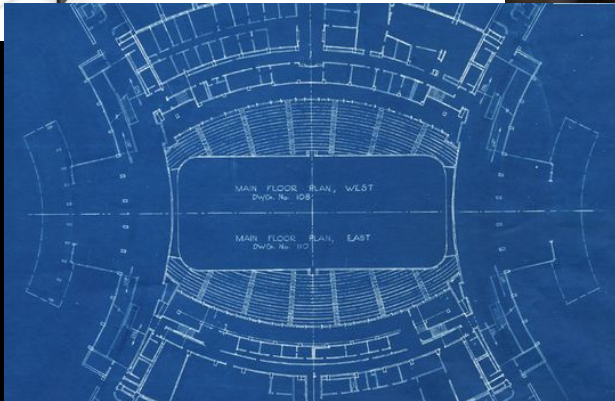
Virtual Venues

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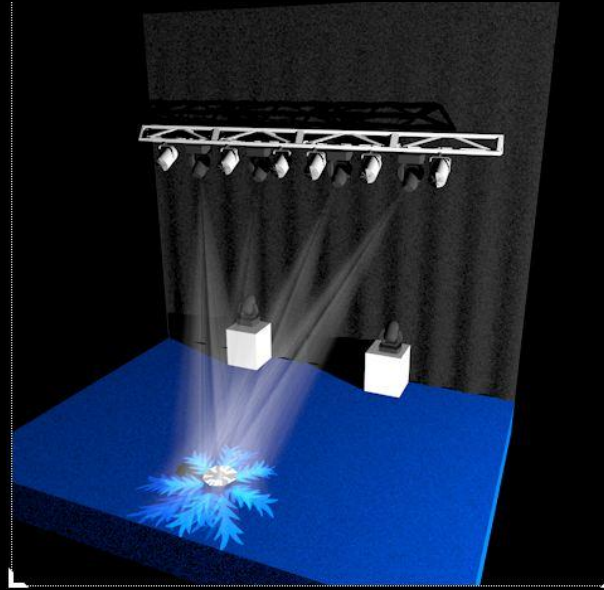
Overview



Problem & Solution



April Yang



Vectorworks



**Stanford
Shakespeare
Company**

Harrison Wray



Thai Phan



Task analysis

- Who uses system?
 - DJs, lighting designers, musical artists
- What tasks do they now perform?
 - Venue scouting, light placement, synchronization, and light testing
- What tasks are desired?
 - 3D venue rendering light placement and testing
- How are they learned?
 - Buttons in the interface will be self-explanatory

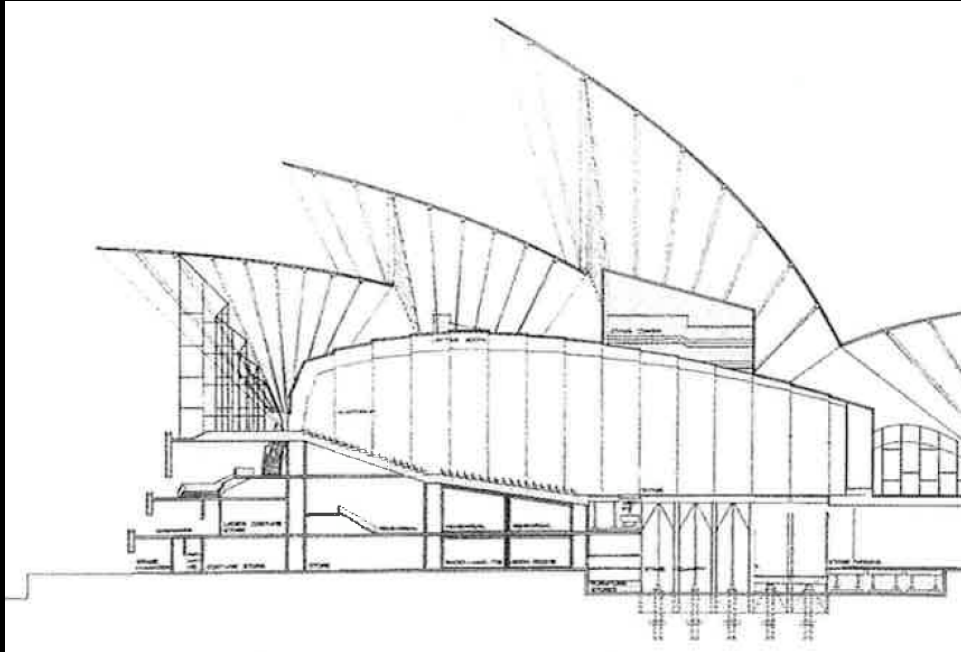
Task analysis

- Where are the tasks performed?
 - Wherever
- What's the relationship between customer & data?
 - Customer uses interface to add and create light data
- What other tools does the customer have?
 - Vectorworks, LX beams, Visual, AGi32
- How do users communicate with each other?
 - They could potentially share their designs with other users

Task analysis

- How often are the tasks performed?
 - Before each performance, or whenever they change or write a new song to be performed
- What are the time constraints on the tasks?
 - Varies by venue
- What happens when things go wrong?
 - Broken equipment, wasted time, low quality performance

Task 1: Virtualizing the Venue



Task 2: Lighting Placement and Timing

The interface is divided into several functional areas:

- Fixture Controls (Top):** A grid of 12 columns, each representing a different lighting fixture. Each column includes a 'SELECT FX' button, a play button, a vertical slider, and a 'FLASH' or 'LEARN' button.
- Stage/Fixture Position (Middle):** A grid of buttons for selecting and positioning fixtures, such as 'VL FAN 1-3', 'VL MA TRIX 1-3', 'VL DS CTR', 'VL US CTR', 'VL DJ', 'SHARP FAN 1-3', 'SHARP MA 1-3', 'BIG LOOK 1-3', 'ALL FAN', 'ALL CROSS', and 'FAN DS'.
- 3D Visualization (Bottom Left):** A 3D rendering of a stage with spotlights and a grid, showing the current lighting setup.
- Master and Timing Controls (Bottom Right):** A 'MASTER' vertical slider and a grid of buttons for timing and effects, including 'strobe', 'blast', 'chase 1', 'chase 2', 'clr chase', 'rd/wh fx', 'bl/gr fx', 'rd/bu fx', 'dim ch 1-4', 'ltr/g ch', 'dj ch', 'dj key', and 'dj fx'.

Task 3: Evaluation of Light Show

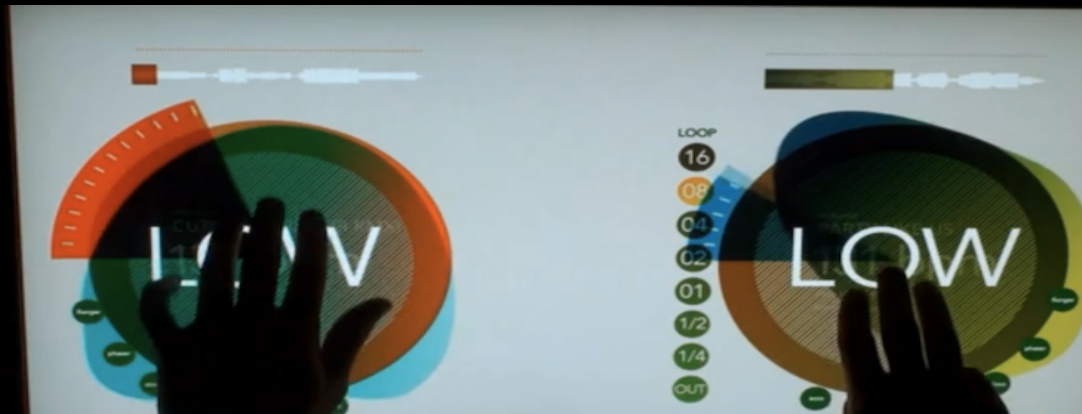


App Idea 1: Oculus Rift Interface

- Oculus Rift is the future.
- Graphics on a Rift will be more realistic than on an iPhone or iPad.
- User input through a controller is feasible, but through motion capture system would be complicated, expensive, and possibly infeasible.
- Access to Oculus Rifts at the Stanford Virtual Human Interaction Lab would be helpful.

App Idea 2: Non-touch touch UIs

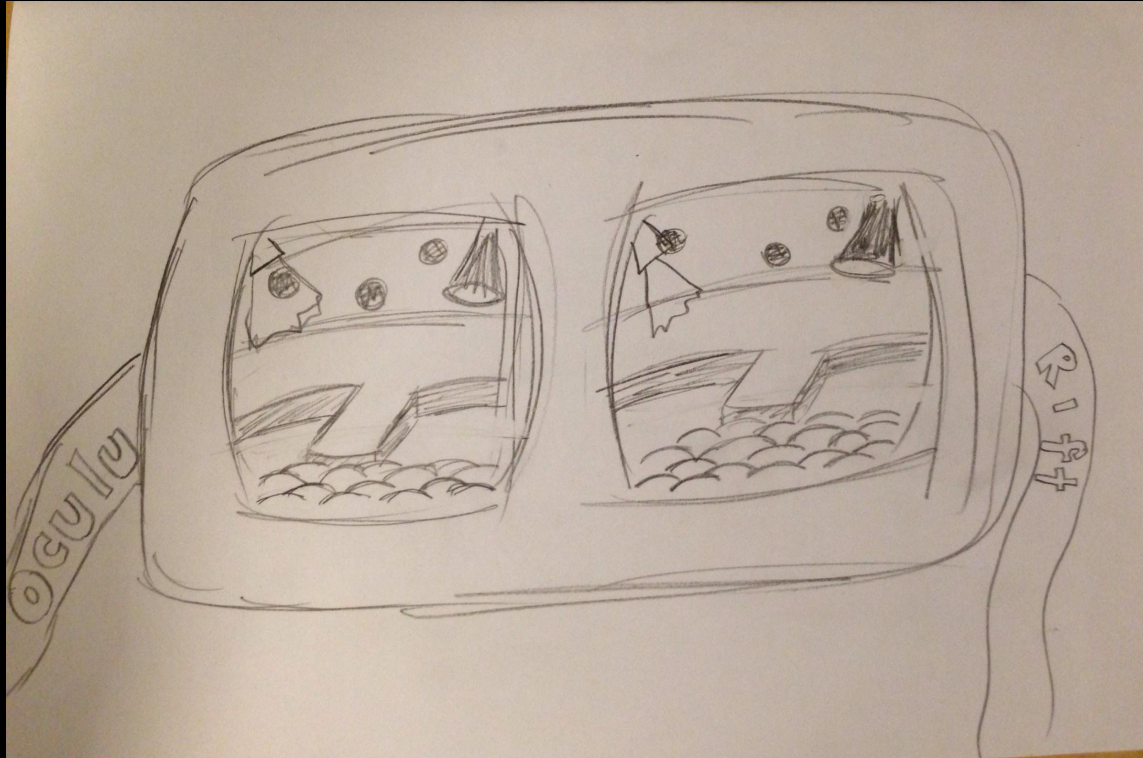
- All control panels are at your finger tips
- Motion tracking
- Necessary equipment:
 - VR headset
 - flat surfaces for VR touch screens (tactile feedback)
- Economical
- Extremely portable



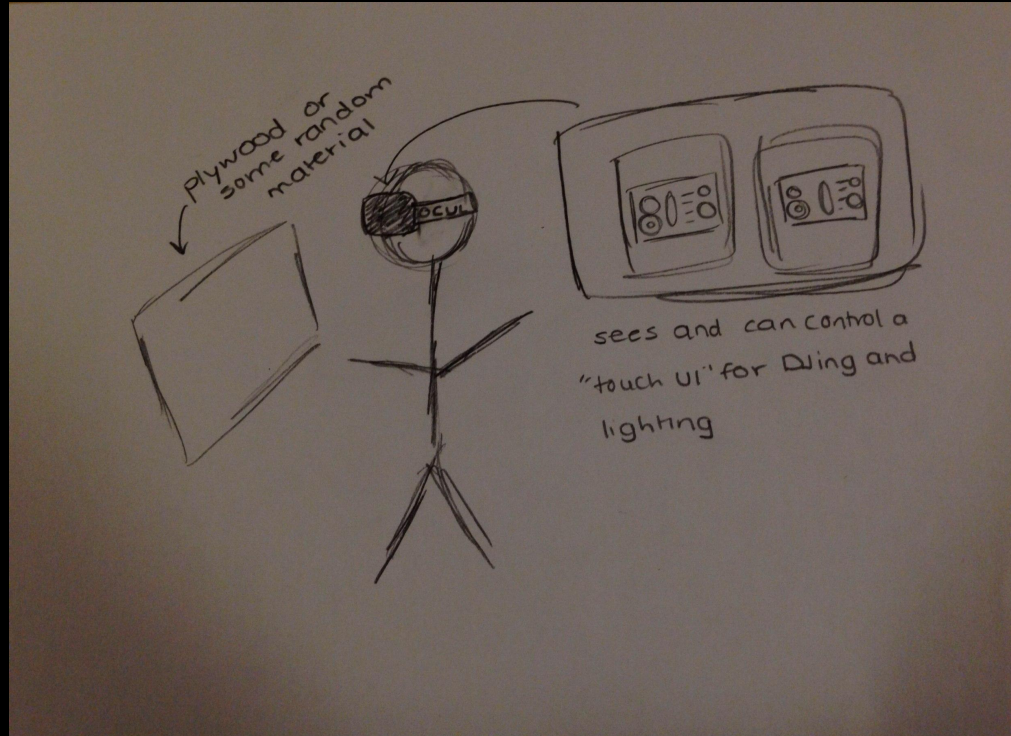
App Idea 3: iPad User Interface

- Better than Rift because more people own one and know how to use it
- More power than iPhone, bigger
- Allows for more of a touch UI and user interaction than virtual reality alone
- Possible to 3D print mobile viewers and see virtual worlds in stereo

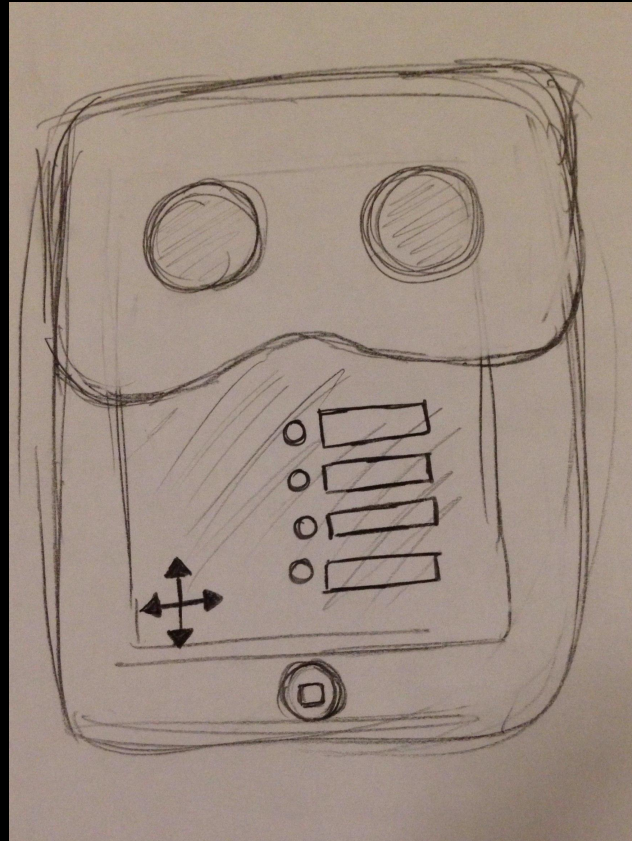
Design Sketch (App Idea 1)



Design Sketches (App Idea 2)



Design Sketches (App Idea 3)



Summary

- Three potential interfaces
- Major issues:
 - Processing power
 - Adoption of VR headsets
 - Cost and feasibility of motion capture systems