



VR Jedi Knight

Citizens For Ted Cruz

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Inspiration

The Problem

Google Cardboard is Limited

Although Google Cardboard provides a framework for thousands of uses utilizing its technology, as it currently stands, users can only interact with the device in 2 ways: by moving their head (and body) or by pressing the single button

Solution

Enhancing the VR
Experience utilizing a
second mobile phone

Networking a second mobile phone
for input can open up a wider range
of possibilities for the Google
Cardboard framework

VR Jedi Knight

This game will allow for players to wield lightsabers utilizing a second mobile phone networked to their Google Cardboard device. Players will rotate and slash their saber using the phone held in their hand to destroy enemy orbs.

What's Been Done?

- There are currently Bluetooth Controllers on the market for games that require hands-free play (e.g. Zombiestan)
- There appear to be several Virtual Reality Lightsaber games in the app store
 - LightSaber Escape enables the viewer to wield a lightsaber tool on their phone, but is limited to desktop view on Google Chrome(not an immersive VR experience)
 - [An enterprising young man](#) has implemented this game for Google Cardboard as of last week - although his design is sparse
 - Disney also released a Virtual Reality Star Wars game, however this game appears to be more of an “exploration” game than a fighting game and does not involve an external sensor

How Do We Innovate?

We hope to further enhance this game to serve as a virtual reality game for Google Cardboard. We want to further utilize the second device in order for the player to interact with in-game objects and interface with the game in ways that were not previously possible.

Technical Approach

The 2 devices will connect over the network: the Google Cardboard device will serve as the server while the secondary device will serve as the client

The only input collected from the secondary device will be the device's gyroscope information

The server phone in the Cardboard viewer will render the gyroscope inputs in the game scene

Issues we encountered:

- Gyroscope information does not correspond as directly with 3D space as we had anticipated - smoothing out controls proved to be a challenge

- Syncing up the simulated lightsaber physics with the 3D player model such that the avatar's movements appear natural and in accordance with human musculo-skeletal structure (i.e. the player's arm does not appear to be dragged by the saber, the arm cannot contort in unnatural shapes)

Timeline

- Weeks 5/6:
 - Set up phone interface to exchange information about secondary phone's position/orientation/acceleration
 - Get first demo of player manipulating simple saber with second phone by week 7
- Week 7/8:
 - Develop initial graphics for game using Blender
 - Create first fighting arena
 - Develop player character that wields the saber
 - Perfect player controls and game physics
 - Should have simple single player demo with graphics ready by end of week 8
- Week 9/10:

Q&A

- What are best ways to handle latency concerns (dead reckoning)?
- Interesting ways to utilize the second device that we haven't thought of?
- Other external sensors that would be easy to use and would enhance the game (e.g. bluetooth headset for sound capabilities).
