Stepping Shop | Team 5

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Project Concept

- This project will allow retailers to display all product versions on a limited floor space and shoppers to customize the virtual store based on preferences, such as product type, size, and price.

Before/After

- Using our prototype system, shoppers can “walk” through the store, locate products with ease, sample item material, view recommended items, and digitally manipulate them full-size with customization.
Competitive Analysis

Amazon Online Shopping Experience

Trinetra

Adidas Virtual Footwall

Audi Virtual Showroom
Requirements

- **Functional Requirement:**
  - Kinect reads hand gestures as motion information
  - Microphone accepts voice commands to display correct shop section
  - Projector display shop environment well on a curved surface
  - Speaker gives audible user feedback

- **Timing Requirement:** Provides a response to hand gestures in less than 1 second and to voice commands in 3 seconds

- **Reliability Requirement:** Reflects the prices, inventory, and discounts real-time

- **Portability Requirement:** Must be able to quickly set up, dismantle, and move to any location. Must be less than 10ft long, 5ft wide, and 8ft tall
Technical Specification

**Hardware**
- Asus Xtion Pro
- Trade Show Display Screen
- Hi-Def Projector
- Microphone
- Speaker
- Pandaboard ES

**Software**
- Kinect SDK
- Voice Input Interpreter
- HTML Web panels to project onto screen

**Protocol**
- Kinect’s depth/camera perception protocol
- USB 2.0 protocol
- Voice procedure protocol
Architecture

- Shopper
  - Kinect
    - Visual Input
    - Audio Input
  - Laptop
    - Takes raw audio/visual data
    - Analysis of raw data
    - Real-time web database
    - App controls virtual store
  - Projector
    - Visual Output
  - Speaker
    - Audio Output
<table>
<thead>
<tr>
<th>Risks</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment may too noisy for voice commands</td>
<td>User stands in specific spot for the microphone</td>
</tr>
<tr>
<td>Some users, like senior citizens, have restricted level of motion</td>
<td>Option to have Accelerated Mode where motions are much more sensitive</td>
</tr>
<tr>
<td>Users may want to keep their buying private</td>
<td>Option for Incognito Mode</td>
</tr>
<tr>
<td>Kinect Motion Sensing Fail</td>
<td>Voice Commands: “Left, Right, Forward, Close-up, etc.”</td>
</tr>
<tr>
<td>Microphone Voice Command Fail</td>
<td>Have an inventory map to select items from</td>
</tr>
</tbody>
</table>
Questions, Comments, Concerns?

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