

MICHIGAN STATE

UNIVERSITY

Alpha Presentation

IMAGINE: IMAGE INTake Experience

The Capstone Experience

Team Auto-Owners

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*From Students...
...to Professionals*

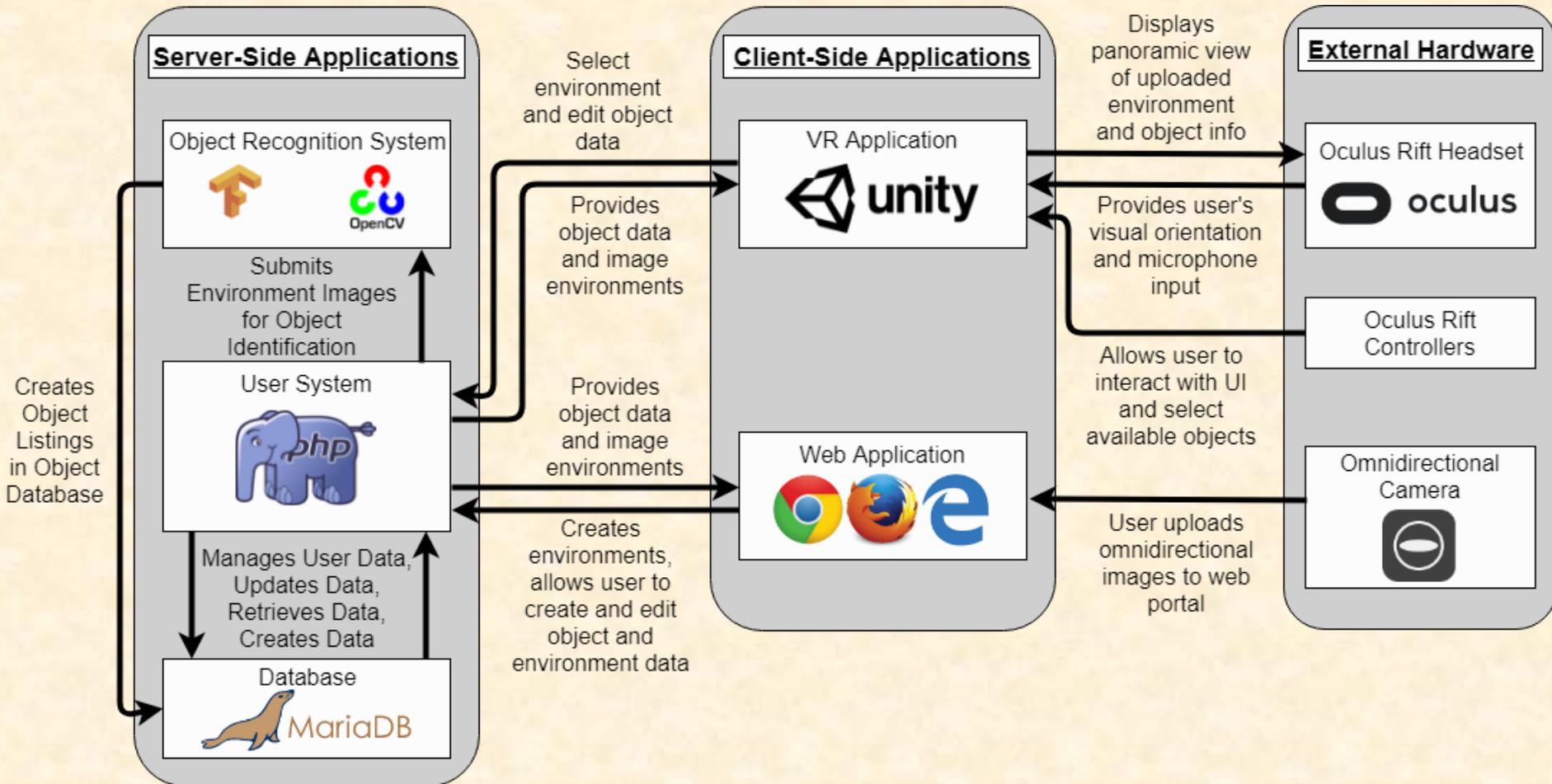
Department of Computer Science and Engineering
Michigan State University
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Project Overview

- Auto-Owners wants a way to easily Evaluate Physical Environments
- Virtual Reality Application
 - View 360° Images as if you are On Location using an Oculus Rift
 - View Info and Make Notes on Objects using the Oculus Controllers
- Web Application
 - Upload Images and Create Environments
 - View and Edit Environment and Image Information
 - View Inventory of Objects in an Environment
 - Add or Edit Objects and their Information
- Object Detector/Classifier
 - Identify Objects in an Image
 - Classify General Types of Environments



System Architecture



Web: Environments List

Filter ▾

Housing

- Smith Home**
324 Maple Street
- Miller Apartment**
13 Second Street
- Jones Home**
2399 Pine Street

Create New Environment

Auto-Owners INSURANCE

Filter ▾

Housing

- Smith Home**
324 Maple Street
- Miller Apartment**
13 Second Street
- Jones Home**
2399 Pine Street

Create New Environment

Offices

- Sparty Office**
202 Shaw Lane

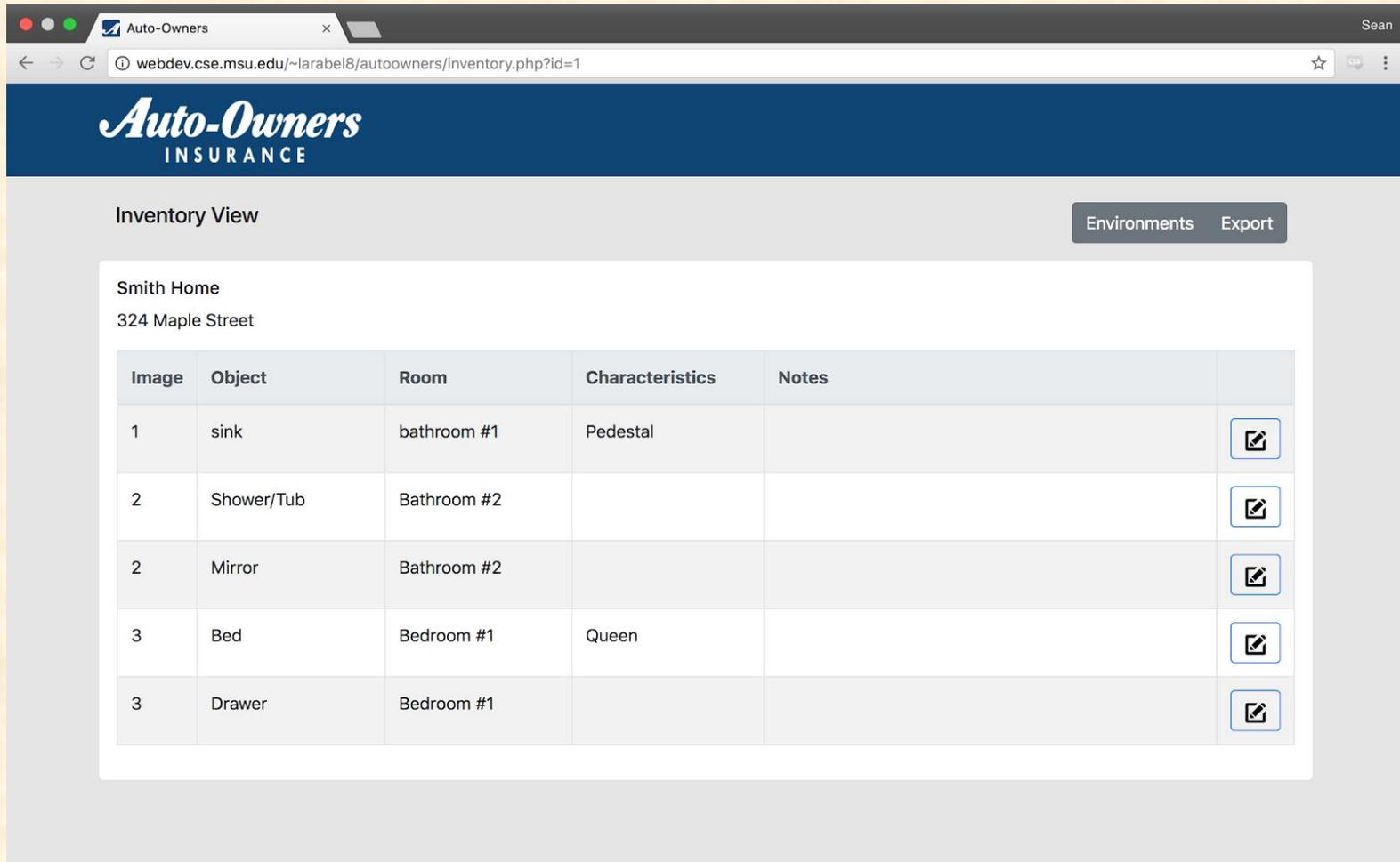
Create New Environment

Restaurants

- Happy's Pizza**
9423 York Rd.



Web: Inventory List

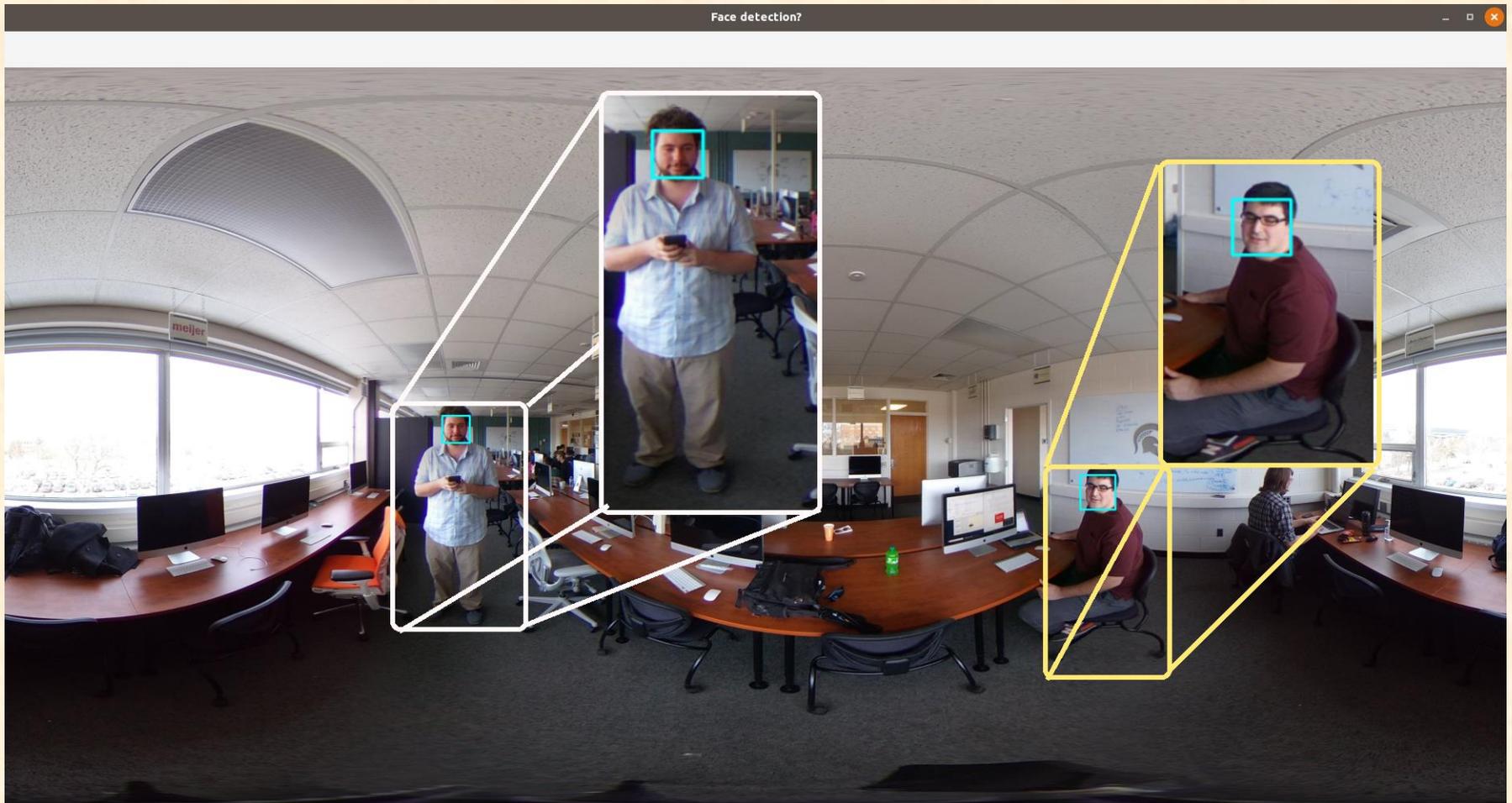


The screenshot shows a web browser window with the URL `webdev.cse.msu.edu/~larabel8/autoowners/inventory.php?id=1`. The page header features the **Auto-Owners INSURANCE** logo. Below the header, the page is titled "Inventory View" and includes buttons for "Environments" and "Export". The main content area displays the address "Smith Home, 324 Maple Street" and a table of inventory items.

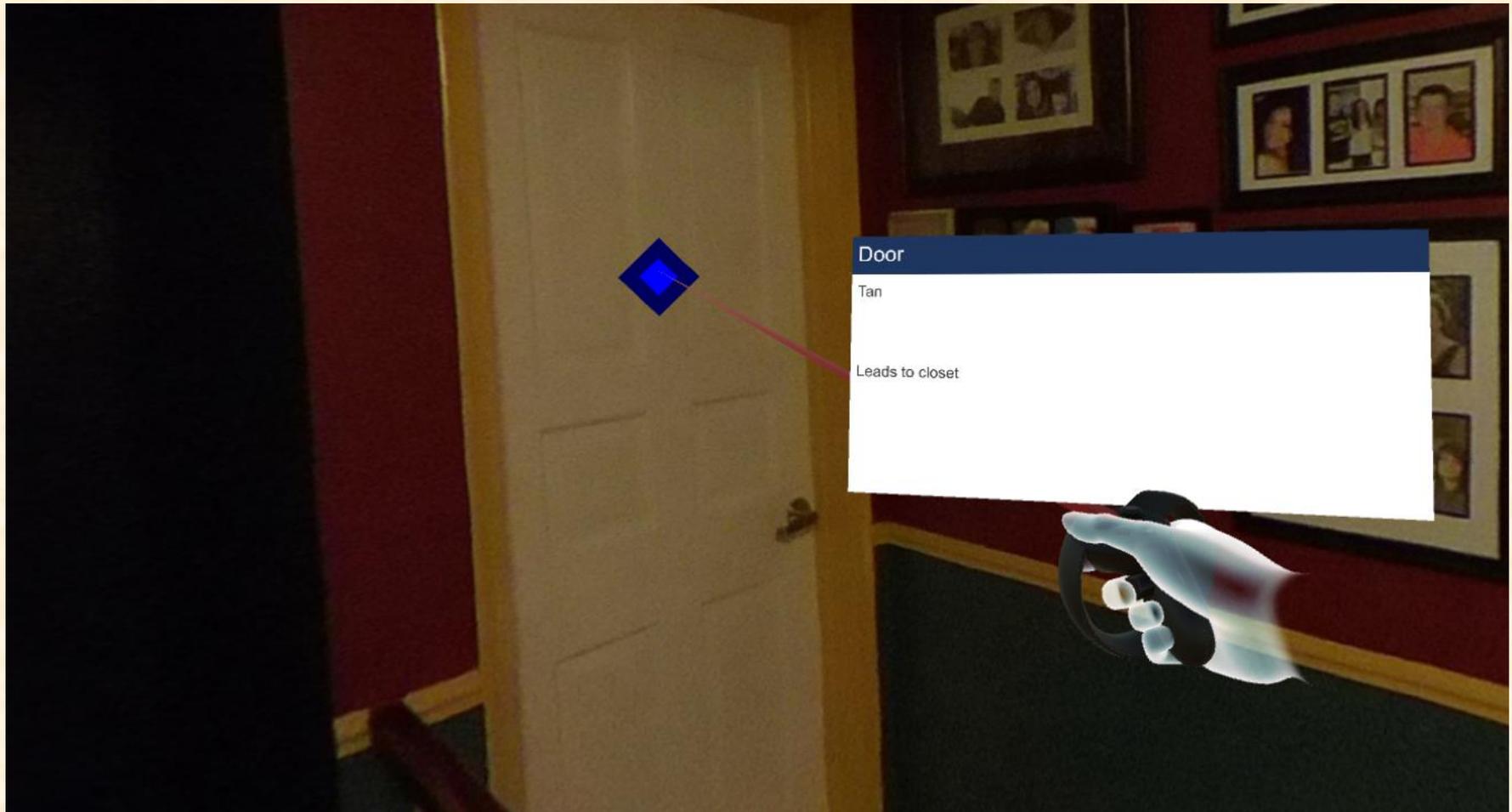
Image	Object	Room	Characteristics	Notes	
1	sink	bathroom #1	Pedestal		
2	Shower/Tub	Bathroom #2			
2	Mirror	Bathroom #2			
3	Bed	Bedroom #1	Queen		
3	Drawer	Bedroom #1			



Object Detection



VR: Selecting Object Nodes



What's Left To Do?

- **Object Detection**
 - Implement Classification Abilities for Additional Objects
 - Implement Environment Classification Abilities
 - Overcome Effects of Warping in 360° Images
- **VR Application**
 - Complete UI Elements
 - Fix Image Distortion Issues
- **Web Application**
 - Add Image Gallery
 - Implement Exporting of Object Inventory to Other File Formats (i.e. csv, xml, json, etc.)
- **Integrate Web and VR Clients with Server Backend**



Questions?

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