Beta Presentation

IMAGINE: IMAGe INtake Experience

The Capstone Experience

Team Auto-Owners

Zack Geizer
Reece Cole
Sean Larabell
Nick Frederick
Xinyun Zhao

Department of Computer Science and Engineering
Michigan State University
Spring 2018
Project Overview

- To appraise risks, Auto-Owners underwriters must evaluate environments such as homes or businesses with as much information as possible. Our software detects objects of interest in those environments, and allows underwriters to view those environments remotely; saving time and money.

- A Website that allows users to store information about insurable environments
  - Upload 360 degree pictures and automatically detect objects of interest within them
  - Export the object inventory to various formats (xml, csv, etc.)

- A Virtual Reality Application that allows users to view an environment from the center of each room
  - Ability to view and interact with detected objects in a room
  - Users can make notes about objects and store them for later use
System Architecture

**Server-Side Applications**
- Object Recognition System
  - Selects and edits object data
  - Submits environment images for object identification
- User System
  - Manages user data, updates data, retrieves data, creates data
- Database

**Client-Side Applications**
- VR Application
  - Displays panoramic view of uploaded environment and object info
- Web Application

**External Hardware**
- Oculus Rift Headset
  - Provides user's visual orientation and microphone input
- Oculus Rift Controllers
- Omnidirectional Camera
  - Allows user to interact with UI and select available objects

User uploads omnidirectional images to web portal.
Website Environments Page

Environments Page

- Jones Home
  - 428 S Shaw Ln
  - East Lansing, MI 48823
  - View

- Smith Home
  - 366 W Circle Dr
  - East Lansing, MI 48823
  - View

- Miller Apartment
  - 325 W Shaw Ln
  - East Lansing, MI 48823
  - View

- Berry Home
  - 223 Kalamazoo St
  - East Lansing, MI 48823
  - View

- Case Apartment
  - 642 Chestnut Rd
  - East Lansing, MI 48823
  - View

- Kellogg Home
  - 211 Ann Street
  - East Lansing, MI 48823
  - View
Website Inventory Page

![Website Inventory Page](image)

### Jones Home
428 S Shaw Ln
East Lansing, MI 48824

- 4 Bed / 3 Bath / 1,498 sq ft

**View in VR**  **View Images**  **Edit**

<table>
<thead>
<tr>
<th>Image</th>
<th>Object</th>
<th>Room</th>
<th>Characteristics</th>
<th>Notes</th>
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<td>Sink</td>
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</table>
Object Recognition Bounding Boxes
VR Object Nodes and Info Display
What’s left to do?

- Make Improvements to Visual and User Interface Elements of the Software
- Continuously Improve Object Detection
- Clean Up and Improve Code Documentation
- Optimize Existing Code for Performance and Efficient Resource Usage
- Further Modularize Existing Code
Questions?