Beta Presentation
DeepOven: Volume and Quantity Estimation in Cooking

The Capstone Experience
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Project Overview

- Whirlpool is creating a smart oven to make cooking easier and more enjoyable for customers
- Livestream view of the cavity from the Whirlpool mobile app
- Food recognition
- Doneness detection
- Initial cook time estimation
- DeepOven is a proof of concept that initial cook time can be estimated
- Software can detect food volume, quantity, and rack level using a camera inside the oven cavity.
- **Visualization of the food volume, quantity, and rack level will be displayed through the web for the Whirlpool development team**
System Architecture
Home Page

DeepOven: Volume and Quantity Estimation in Cooking
Estimation Page

DeepOven: Volume and Food Density Estimation in Cooking

Volume Estimation
Result: Still processing... cm³

Food Count
Result: 1 Food Objects Found

Rack Level Detection
Result: Detected at Rack Level 2

Pizza
## Data Analytics Page

### Confusion Matrices of Rack Level Detection Model

<table>
<thead>
<tr>
<th>Entry</th>
<th>Volume</th>
<th>Rack Level</th>
<th>Rack Conf</th>
<th>Food Count</th>
<th>Segmentation Conf</th>
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</tbody>
</table>

- **How it works**: 
- **Upload File**: 
- **Set segmentation model**
Run History Graphs
What’s left to do?

- Features
- Stretch Goals
  - Put together images of food to further test our models
  - Display model performance on another page
  - Stream “oven” video to multiple computers at once
- Other Tasks
  - Measure real food volume to test against the volume model
  - Update the “How it works” page
  - Improve the volume estimation accuracy
  - Finish setting up Docker
Questions?