

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# Project Plan

## Online Moving Estimator

### The Capstone Experience

#### Team Two Men And A Truck

James Williams

Kevin Dittman

Daria Tarasova

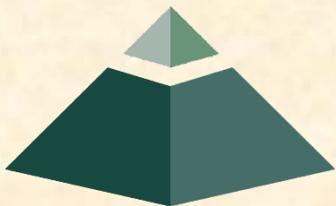
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Fall 2017



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

# Functional Specifications

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- Portal for customer service representatives (CSR) to manage sessions and enter data
- Integrated video chat service for online estimate
- Companion mobile app for ease of use
- Classifying objects for general estimate

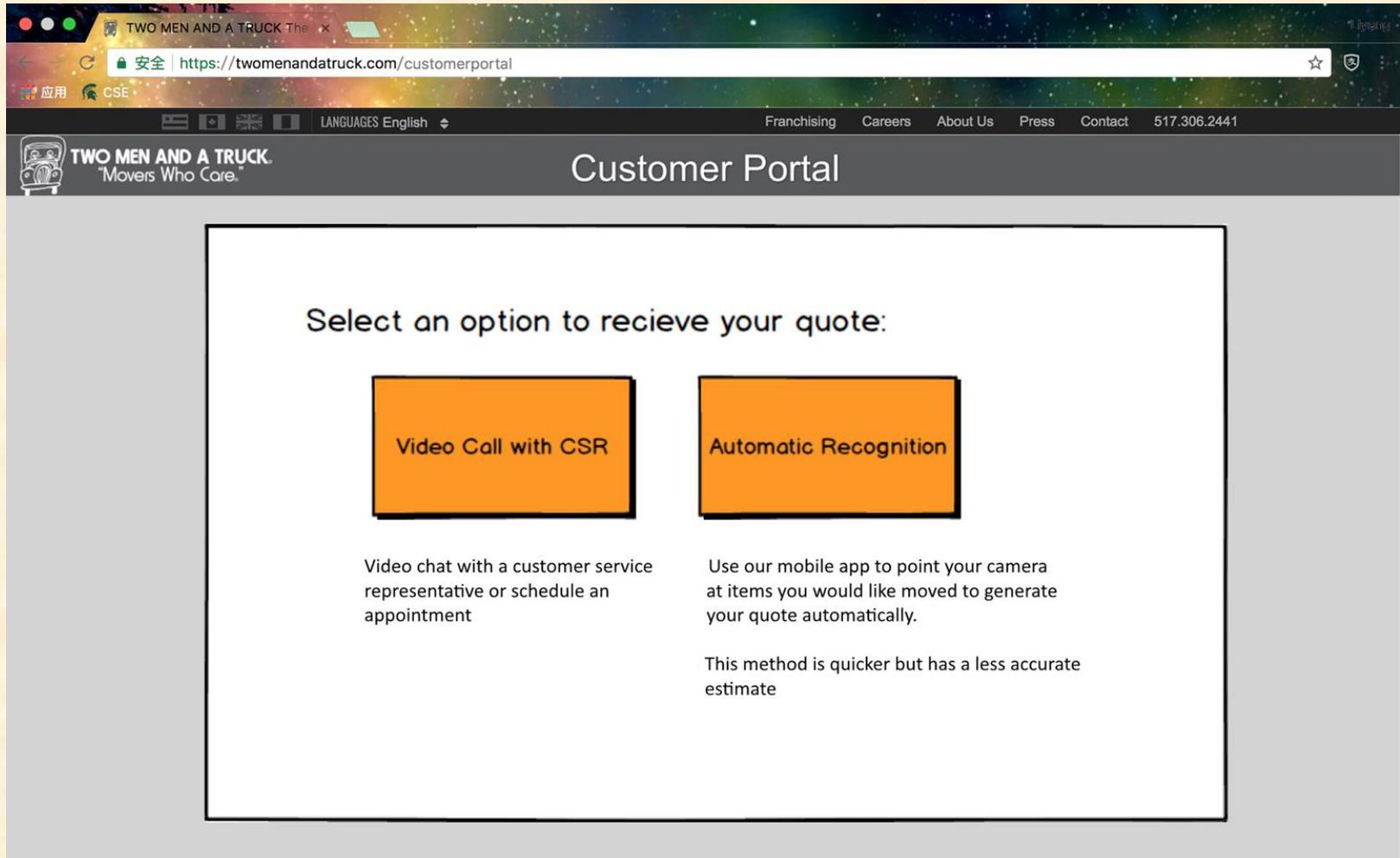


# Design Specifications

- Conforms to TMAAT brand standards
- Two different interfaces for Customer and CSR
- Customer can select video chat or image recognition
- CSRs can mark themselves available for video chat, create appointments and initiate video chats
- On mobile app, users can take a picture and be presented the furniture detected as well as the total cost.



# Screen Mockup: Web Interface



# Screen Mockup: Web Interface

Sorry, currently there is no CSR available, you can schedule a future appointment or choose automatic recognition.

Automatic Recognition

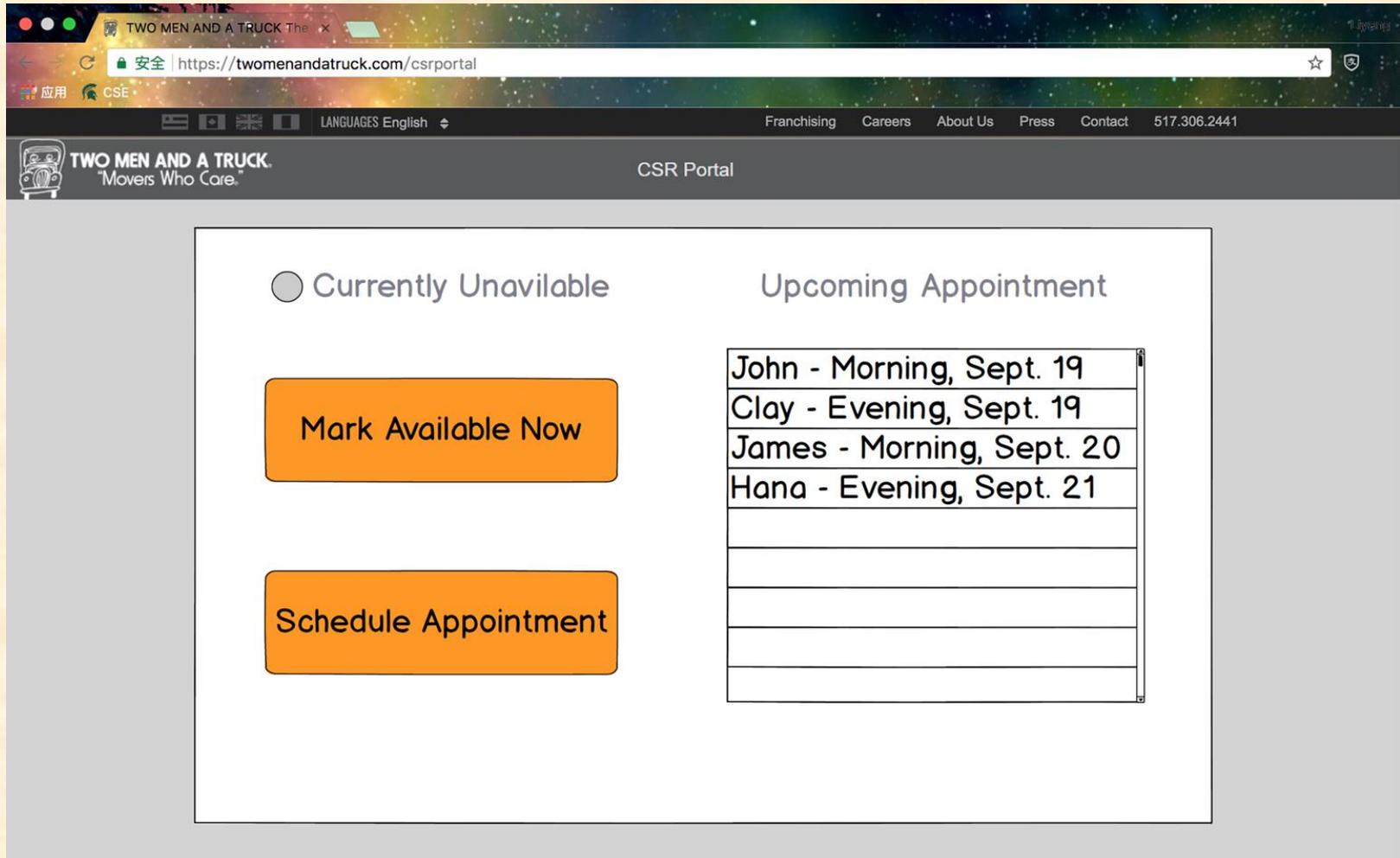
SEPTEMBER 2017						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Sept. 14th

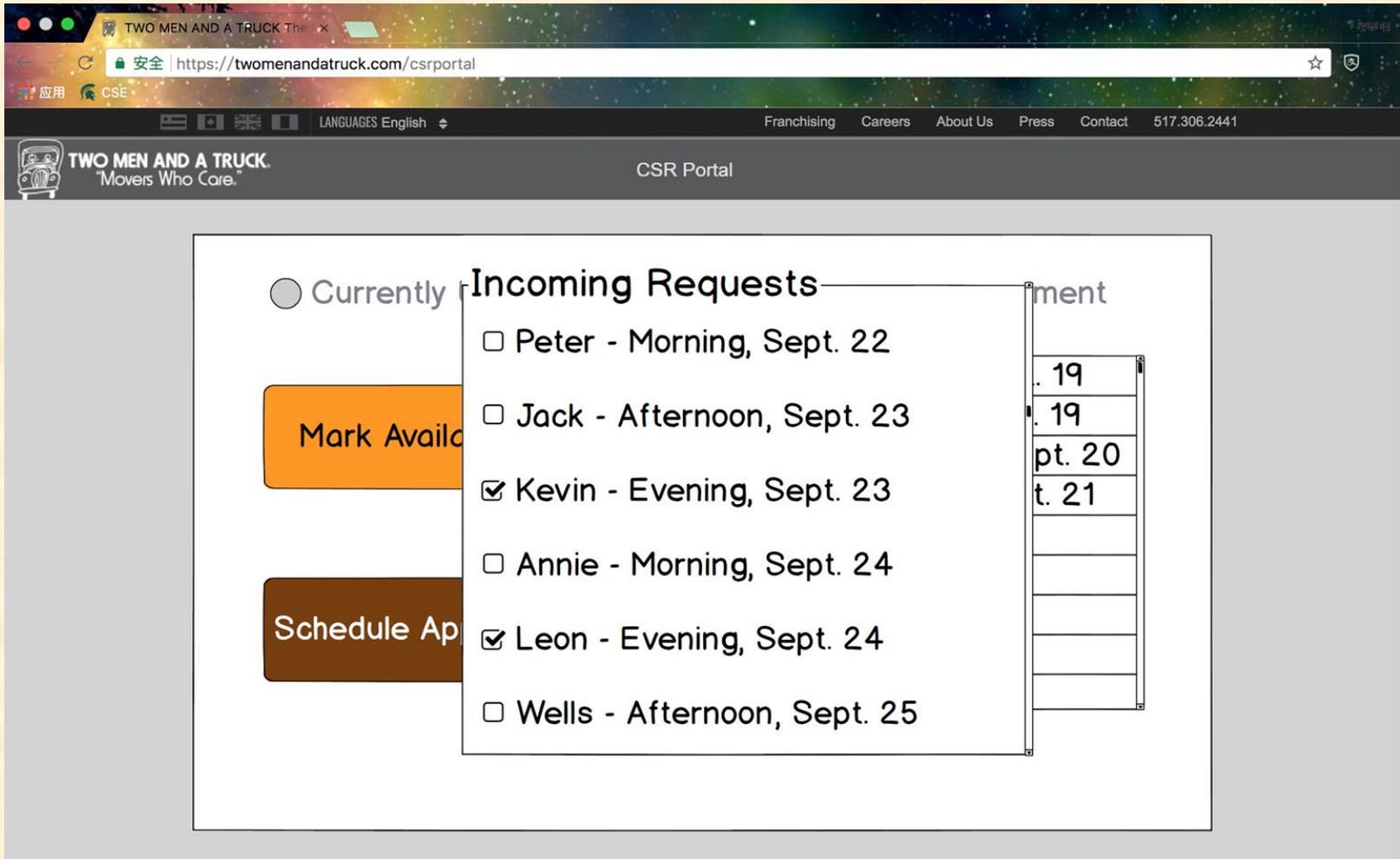
- Morning
- Afternoon
- Evening



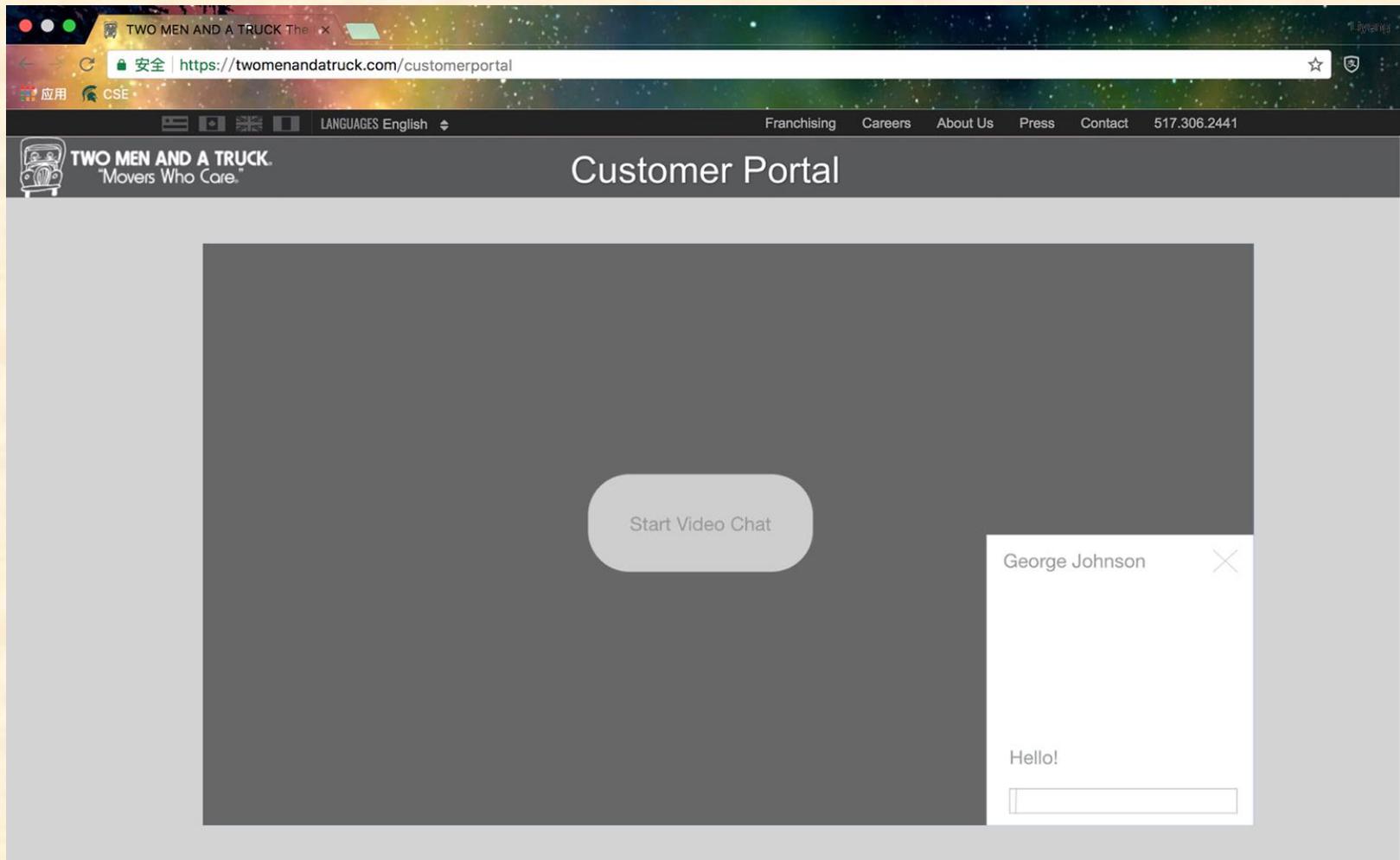
# Screen Mockup: CSR Web Interface



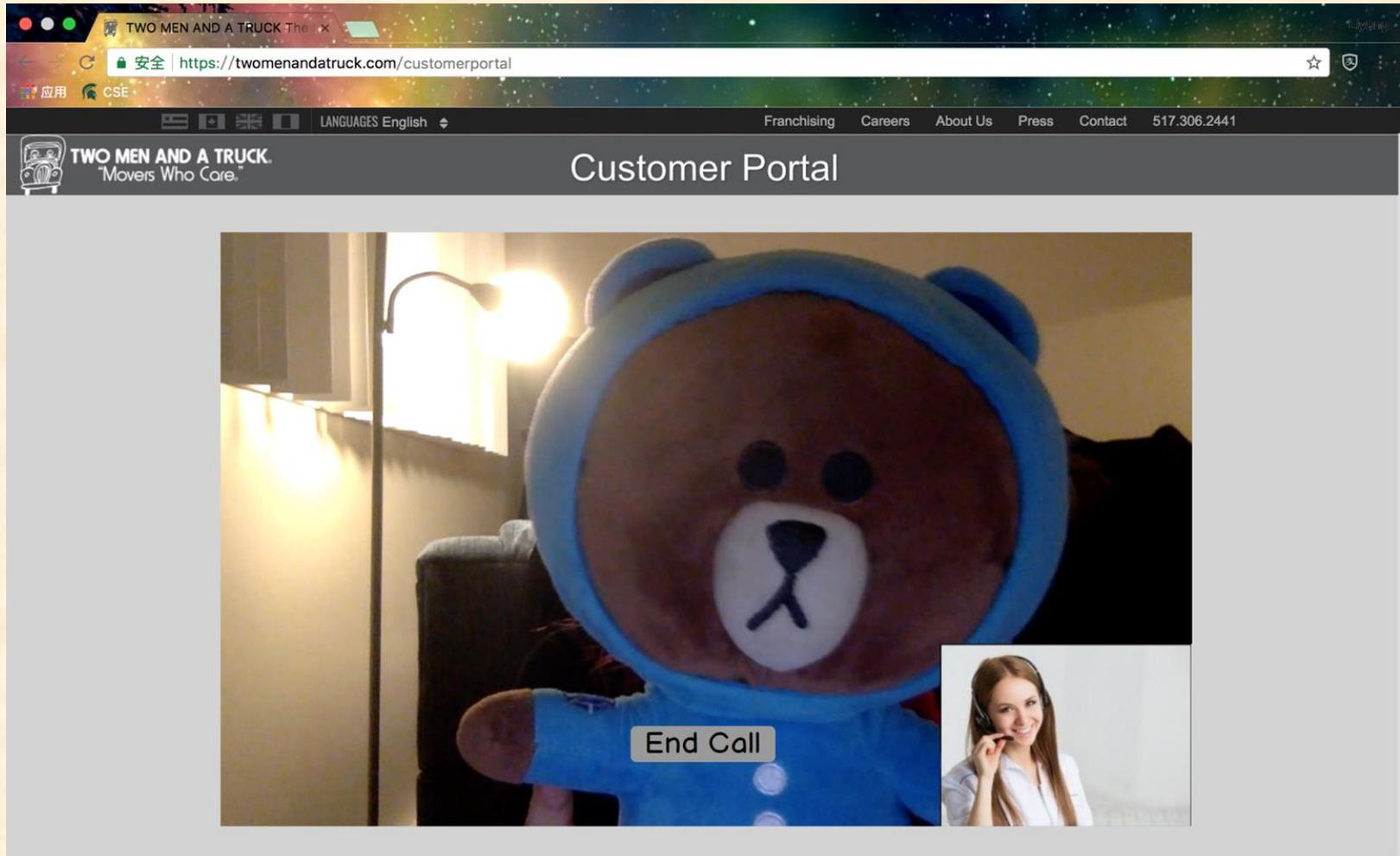
# Screen Mockup: CSR Web Interface



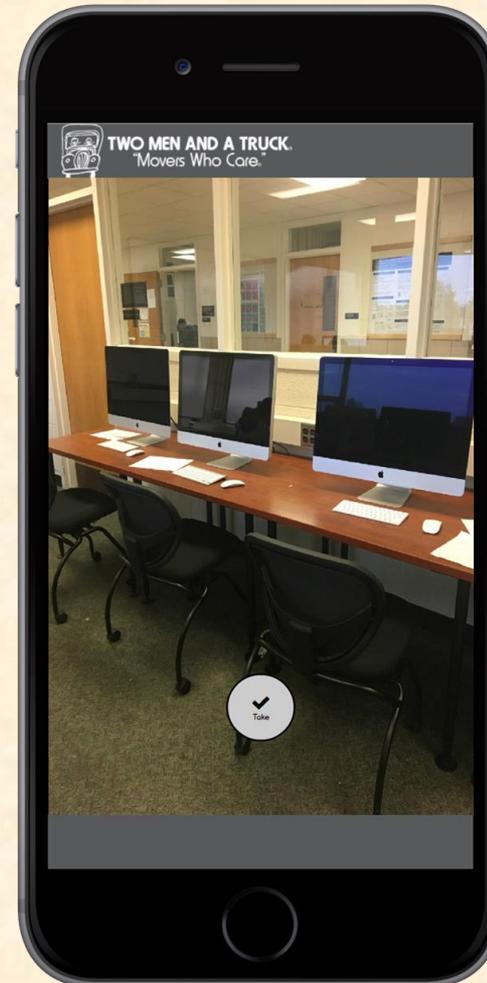
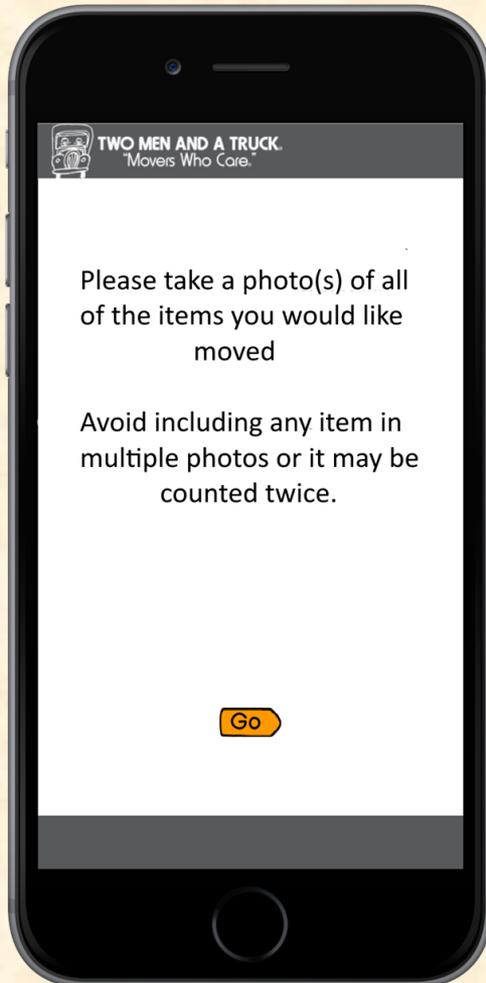
# Screen Mockup: Web Interface



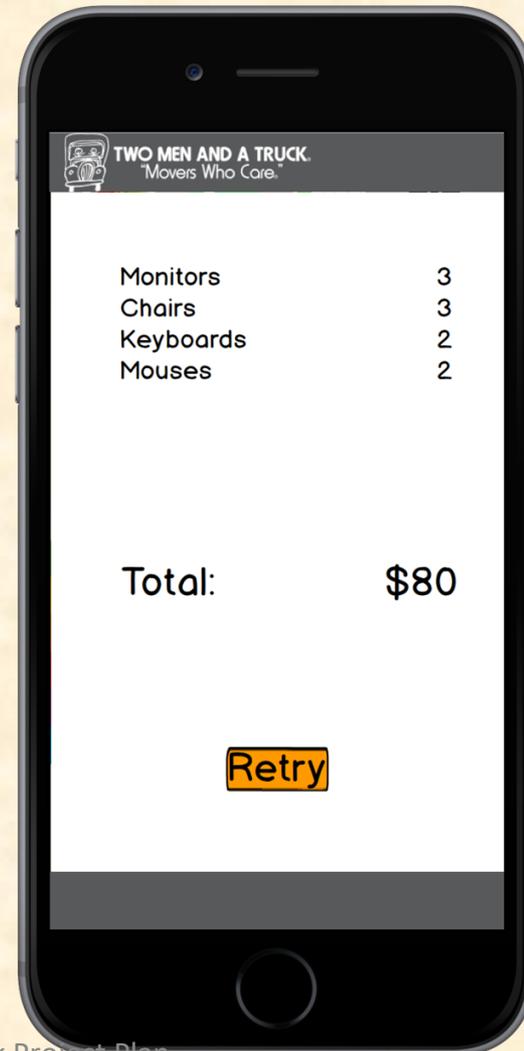
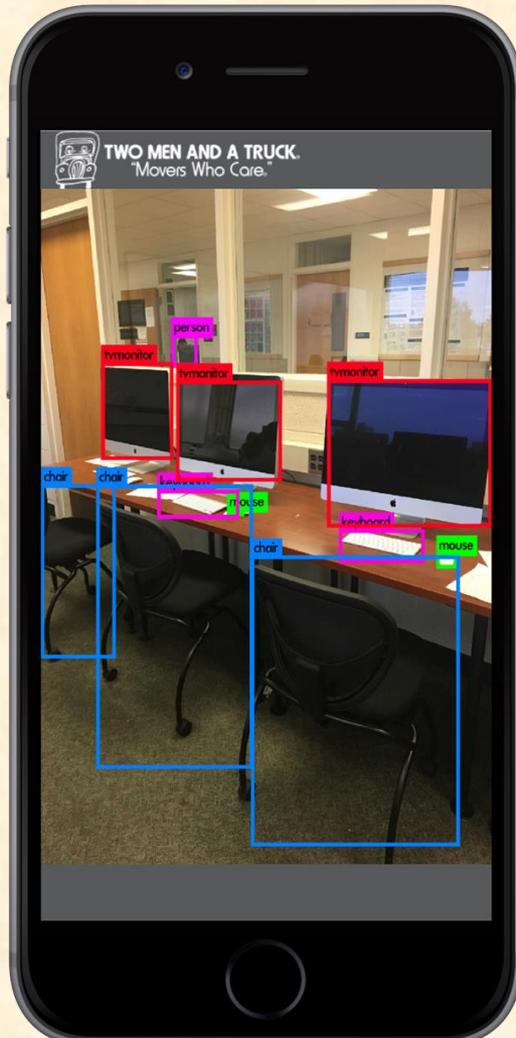
# Screen Mockup: Web Interface



# Screen Mockup: Phone Interface



# Screen Mockup: Phone Interface



# Technical Specifications

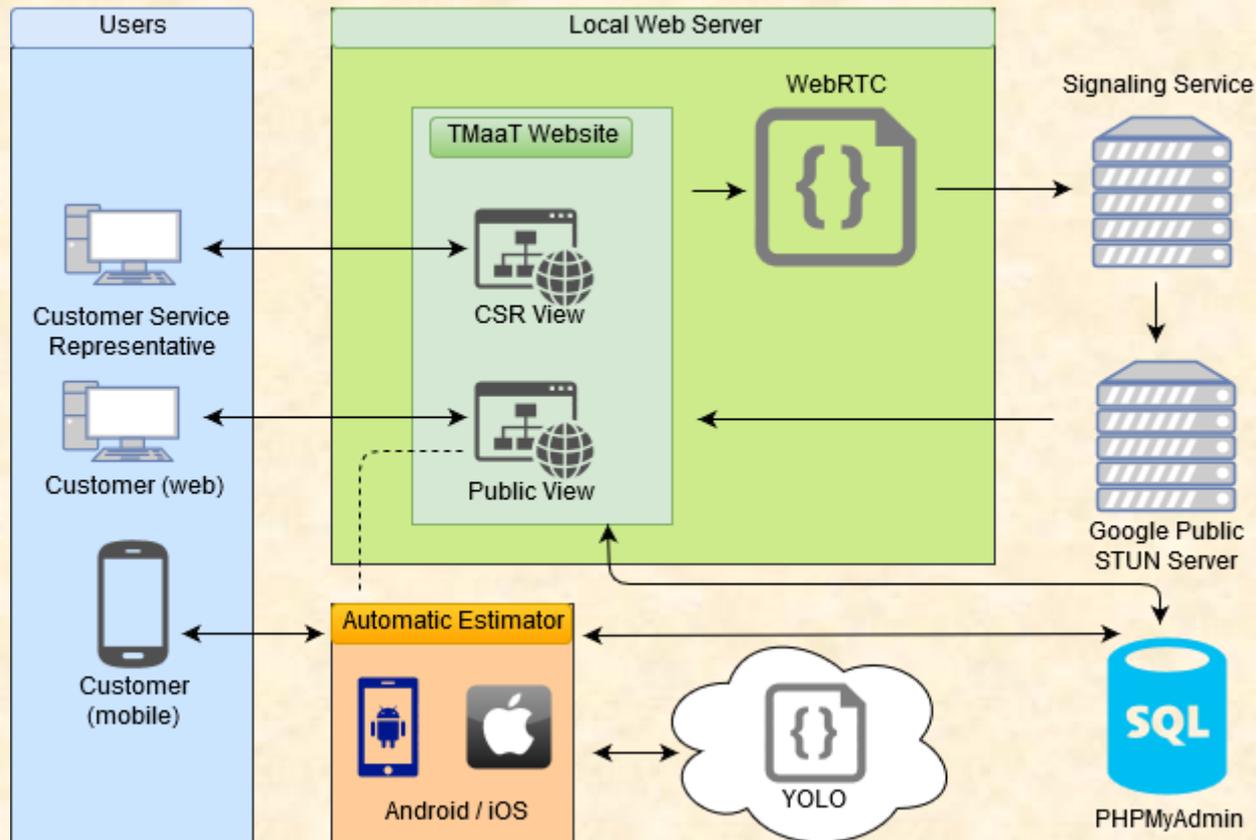
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- Peer-to-peer communication between clients via WebRTC / PHP Ratchet signaling.
- Image recognition using YOLO real-time object detection and end-user's camera/hardware.
- Compatibility with Two Men and a Truck's existing estimation algorithm.
- Using PHP/JavaScript for eventual portability between development and production environments.



# System Architecture

Two Men and a Truck Online Moving Estimator System Architecture



# System Components

- Hardware Platforms
  - Artic
  - AWS
- Software Platforms / Technologies
  - WebRTC for video and text chat
  - PHP/JavaScript, PHPStorm
  - Yolo2 for object recognition
  - ScaleDrone for signaling server
  - PHPMyAdmin for SQL Server



# Testing

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- Cross-Browser Testing
- Unit Tests
  - PHPUnit
- Field tests
  - Ask a TMAAT CSR to test the software



# Risks

- Video Conferencing
  - No team member has experience with webRTC or video conferencing
  - Figured out text chat, already sourced useful tutorials
- Recognizing Volume Based on Image Classification
  - Don't know if estimate will be accurate
  - Sourced examples of a similar process with food density on a plate
- Writing a Signaling Server
  - No team member has experience with this
  - Sourced libraries and tutorials, already set up with a 3rd party service



# Questions?

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