From Students…
…to Professionals

Project Plan
Online Moving Estimator
The Capstone Experience
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Functional Specifications

• 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

Customer Portal

Select an option to receive your quote:

- **Video Call with CSR**
  Video chat with a customer service representative or schedule an appointment

- **Automatic Recognition**
  Use our mobile app to point your camera at items you would like moved to generate your quote automatically.
  
  This method is quicker but has a less accurate estimate.
Screen Mockup: Web Interface

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

- 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

Please take a photo(s) of all of the items you would like moved

Avoid including any item in multiple photos or it may be counted twice.
Screen Mockup: Phone Interface
Technical Specifications

- 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

Users
- Customer Service Representative
- Customer (web)
- Customer (mobile)

Local Web Server
- TMaAT Website
- CSR View
- Public View
- WebRTC

Signaling Service
- Google Public STUN Server

Automatic Estimator
- Android / iOS
- YOLO

Database
- PHPMyAdmin

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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

• 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?