From Students…
…to Professionals

MICHIGAN STATE UNIVERSITY

Project Plan
Virtual Dealership Adviser
The Capstone Experience

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Functional Specifications

• Problem: Dealership employees currently analyze exhaustive datasets/charts to identify areas of improvement
  ▪ Virtual Dealership Adviser will provide concise input for actionable areas of improvement

• Solutions are generated given the user’s question
  ▪ System identifies relevant Key Performance Indicators (KPIs)
Design Specifications

• Simplistic design for user interface
  ▪ Ease of use
  ▪ Minimize time spent on device

• Works well on all major mobile devices
Screen Mockup: Response

Select a potential area for improvement:

- Sedan Sales: 30%
- Other KPI: 60%
- Other KPI: 80%

Recommended Actions:

- Your full-size truck sales in the Detroit area are 30% above expected!
- We recommend increasing inventory.

Options:
- Ignore
- Take Action

You may also want to try:

- Other KPI: 60%

Start over
Technical Specifications

• Web application done with ASP.NET MVC
• Ranking algorithms made in ASP.NET Web API
• Xamarin.IOS, Xamarin.Android
• Database hosted with AWS
• Speech to text and NLP using Microsoft Cognitive services
System Architecture

Xamarin Framework

ASP.NET Web API

Controller

Virtual Dealership Adviser API

AWS Servers

Dealership Databases

Keyword/KPI mappings

HTTP Request/Response

Read Requests

GET/POST

Microsoft Cognitive Services

Text Analytics API

Bing Speech API
System Components

• Hardware Platforms
  ▪ IOS
  ▪ Android
    ▪ AWS Servers

• Software Platforms / Technologies
  ▪ Xamarin
  ▪ ASP.NET MVC
  ▪ ASP.NET Web API
  ▪ Microsoft Cognitive Services
  ▪ Visual Studio 2017
Testing

• Github
• Trello
  ▪ Issue tracking
• Visual Studio - Unit testing environment
  ▪ Mock data from AWS servers
  ▪ Edge Cases given by Urban Science
• Frequent Client Prototypes
Risks

• Keyword/KPI mapping
  ▪ Accurate determination and ranking of KPIs
  ▪ Quickly prototype and test NLP and algorithm methods

• Appropriately generating actions
  ▪ Need to generate proper solutions to performance
  ▪ Keep in close contact with content experts at Urban Science

• Datasets
  ▪ We are not provided with any real data and are creating dummy data
  ▪ Use NLP methods that won’t require training on questions and results
Questions?