Project Plan Presentation
AI-Based Chat Service

The Capstone Experience

Team RPM
Ishak Ahmed
Leeann Alsaeed
Roshan Atluri
Andrew Dagostino
Ulas Kaygisiz

Department of Computer Science and Engineering
Michigan State University
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Project Sponsor Overview

• International logistics and supply chain solutions company
• End-to-end transportation service provider
• Specializes in vehicle logistics across North America and freight transportation to and from Europe

93% 60k+ 30 20+
Project Functional Specifications

• Problem:
  ▪ RPM has high call volumes, slow tracking responses, and requires 24/7 on-call representatives

• Solution:
  ▪ AI Chatbot that mimics a customer service representative

• Value:
  ▪ Enhance customer service, reduce RPM’s cost, and provide instant answers to drivers and customers
Project Design Specifications

- Universal Chatbot Back-End Service
  - A versatile service that can be integrated into any platform: web, mobile, messaging, etc

- Imitating Call Center Representatives
  - Simulate human-like text-based conversations using AI

- Seamless User-to-Representative Transition
  - Smoothly transfer users to a representative when needed
Screen Mockup: SMS Based Chat

Hello! Welcome to the RPM AI Assistant, how can I assist you today?

Where is my shipment?

Of course! Please enter your Turvo iD and I can locate your shipment for you!

1AGH7324K3Q

Thank you, one minute while I locate your shipment.

Your shipment is currently in Las Vegas, NV.

What is the ETA?

The ETA at your delivery address is Saturday, June 5th at 12:45pm.

How much does the package weigh?

Your package weighs approximately 528 lbs.
Screen Mockup: Web Based Chat
Screen Mockup: WhatsApp Based Chat
Screen Mockup: RPM App Based Chat
Project Technical Specifications

• Front-End Input:
  ▪ User messages are received through a front-end interface (Web, SMS, App)

• Back-End:
  ▪ Back-end service parses user messages, translates to queries, pulls from database, processes and responds to user inquiries

• Turvo API Integration:
  ▪ Turvo API used to access real-time data from RPM’s .NET database

• Natural Language Processing (NLP):
  ▪ OpenAI-driven algorithm to process user messages, understanding intent and context for lifelike text conversations
Project System Architecture

Front-End

Hosting Server

OpenAI

POSTMAN

Database

User messages

Drivers/Consumers

GET/POST Request

Server Communication

Flask

Python

Read/Write

.NET

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Project System Components

• Software Platforms / Technologies
  ▪ Microsoft .NET / Azure
    o RPM’s Back-End and Database
  ▪ OpenAI API
    o AI model used for NLP and responses
  ▪ Turvo API
    o RPM’s database client, used to access data and query processing
  ▪ Postman API
    o Used to make API calls to Turvo and receive data
  ▪ Python
    o Flask server used to operate and host server
Project Risks

• Making the users command / OpenAI’s API send a query that is compatible with Turvo’s API
  ▪ The query sent from OpenAI may not get the intended response from the TurvoAPI
  ▪ See if the OpenAI API can send database query / make a database of common queries to send to the Turvo API

• Incorporating OpenAI API and keeping the chat focused
  ▪ OpenAI API will be handling the incoming and outgoing user messages and should be able to answer the question while staying focused
  ▪ Read OpenAI’s fine-tuning documentation, example chatbots, AI training

• Translating English to database query
  ▪ A plain English question will need a method of translation from English to a query for the TurvoAPI to process
  ▪ Research open-source tools and Text-to-SQL methods

• Handling nuanced questions that query + logic might not be able to handle
  ▪ There is a chance that certain complex questions may be asked such as “What is the price per mile?” or carriers looking to get paid but may need other requirements completed first
  ▪ Interview call center representatives and study call transcripts to create a list of potential questions that may be asked
Questions?