MICHIGAN STATE UNIVERSITY Project Plan Presentation Al-Based Chat Service

The Capstone Experience

Team RPM

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From Students... ...to Professionals

Team RPM Project Plan Presentation

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

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	CO RPM	
	Text Message Wednesday 11:51 PM	
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	ese enter your Turvo I a your shipment for y	
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Thank you, one your shipment.	minute while I locate	
	Tailay (1001994	
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	r delivery address is 5th at 12:45pm.	
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Your package v 528 lbs.	veighs approximately	

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Screen Mockup: Web Based Chat

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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



Project System Components

- Software Platforms / Technologies
 - Microsoft .NET / Azure
 - RPM's Back-End and Database
 - OpenAl API
 - AI model used for NLP and responses
 - Turvo API
 - RPM's database client, used to access data and query processing
 - Postman API
 - Used to make API calls to Turvo and receive data
 - Python
 - 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 OpenAl'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?

