Project Plan Presentation
Synthetic Media
The Capstone Experience
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Project Sponsor Overview

• Products & Services
  ▪ Data analysis & consulting services for the automotive sales
  ▪ Modern network planning to the automotive industry
Project Functional Specifications

• Challenges
  ▪ Users had to manually analyze data and leave comments to the dashboard
  ▪ Making instructional videos using external resources (actors, other services, etc.) are costly, timely, complicated and inefficient.

• Solutions
  ▪ Real time data analysis and instruction to the user
  ▪ Brief written report and detailed video instructions
Project Design Specifications

• One-click real time data analysis based on most up-to-date data
• Instructional video with virtual avatar explaining in detail
• Highlights on main points of improvements (e.g., decreasing trend in sales)
Screen Mockup: Home Page
Screen Mockup: Widget Popup
Screen Mockup: Video

Brand Retention Next 6 months

The expected brand retention is trending upwards, a possibility to increase brand retention is to start increasing the quality of our customer service.
Screen Mockup: Brief Text Report

The red line indicates your brand retention rate from past 6 months. Blue line indicates the average brand retention from different dealers for the past 6 months. Based on your performance, your brand retention rate is in negative trend. The solution can be ...
Project Technical Specifications

• Frontend makes the API call to the backend. FastAPI deals with query and data retrieval from Azure SQL DB.
• Sends the retrieved data to the analysis modules, which will output keywords and concepts must be used for LlaMA-2 API.
• LlaMA-2 API generates text prompt for D-ID API.
• D-ID API generates video of avatar based on the prompt, then it’s sent via FastAPI and shown on the frontend popup screen.
Project System Architecture
Project System Components

- **Frontend**
  - HTML, CSS, AngularJS

- **Backend**
  - FastAPI, Azure SQL Database, Azure App Services

- **Data Analysis**
  - Python

- **Text & Video Generation**
  - Python: D-ID API, LlaMA-2 API
Project Risks

• Quality limitations in Pretrained Talking Face Models
  ▪ There are many pretrained talking face models, but the videos are not guaranteed to be coherent and smooth.
  ▪ Listed few APIs (e.g., D-ID) for alternative candidates. Awaiting client’s decision.

• Absence of data
  ▪ Requested and confirmed sharing mock-up data
  ▪ Currently in progress for mock-up data migration

• Generic Feedback from LLaMA-2 API
  ▪ Further research in progress. Finetuning in consideration.
  ▪ Feedback dataset may be requested if finetune.
Questions?