Project Plan Presentation
Artificial Intelligence (AI) Training Course

The Capstone Experience

Team HAP
Advait Paliwal
Ashley Arciniega
Joey Morrison
Caleb Story
Vetri Vijay

Department of Computer Science and Engineering
Michigan State University
Spring 2024
Project Sponsor Overview

• Health Alliance Plan (HAP) is a non-profit Michigan insurer, serves 430,000 members
• Workforce of 1100, prioritizes employee development
• Allocates 90% of premium revenue directly to healthcare services
Project Functional Specifications

• Simplify AI learning with a 15-minute web-based course covering AI basics, tailored for all technical levels.
• Integrate an interactive AI avatar "professor" for engaging, personalized content delivery and Q&A sessions.
• Empower HAP staff to utilize AI for productivity enhancement and problem-solving in everyday tasks.
Project Design Specifications

• Seven interactive modules with quizzes and a resource hub for comprehensive AI learning.
• Progress-tracking dashboard with easy navigation to modules, quizzes, and resources.
• Engaging chapters with in-depth content, Q&A, and live chat for interactive learning.
• Integrated AI avatar for interactive text and voice chat, simulating real AI interactions.
Screen Mockup: Dashboard
Screen Mockup: Module
Screen Mockup: Quiz

Module 1
Language Models

Instructions: Choose the best answer for each question.

1. What is the main function of a language model?
   - To predict the weather
   - To understand and predict human language
   - To solve mathematical equations
   - To play video games

2. Which of the following is an example of a language model application?
   - Playing music
   - Predicting the next word while typing
   - Calculating mathematical equations
   - Drawing pictures

3. How do language models learn from text data?
   - By memorizing every word in the dictionary
   - By analyzing patterns and relationships in sentences
   - By guessing randomly
   - By ignoring text data completely

4. What role does feedback play in improving language models?
   - It helps models learn from their mistakes and adjust predictions
   - It teaches models to speak different languages
Screen Mockup: Avatar
Project Technical Specifications

• Using Python and FastAPI for backend
• MongoDB for database
• Next.JS, Typescript, and shadcn/ui for frontend
• Communicating via RestAPI routes
• OpenAI for text generations and Pinecone for vectorstore memory
• D-ID for live avatar generations
• Docker to containerize and GCP to deploy
Project System Architecture

The Capstone Experience

Team HAP Project Plan Presentation
Project System Components

- Docker
- FastAPI
- Google Cloud Platform
- MongoDB
- Next.JS
- OpenAI
- Pinecone
- GitLab
- D-ID
Project Risks

- **Avatar Cost**
  - High costs associated with avatar services.
  - Use basic cached animations for the avatar and rely on chat responses during Q&A to manage costs.

- **Technical Limitations of AI and LLMs**
  - Potential inaccurate responses from AI and LLMs.
  - Regularly update and train the AI with relevant data and implement a feedback system for prompt correction of inaccuracies.

- **Latency of Product**
  - Potential latency affecting user experience in AI-driven interfaces.
  - Optimize the text-to-speech pipeline and cache content and avatar to reduce latency and enhance interaction.

- **Content Relevance**
  - Rapid AI advancements risk making course content quickly outdated.
  - Schedule regular updates and leverage AI adaptability
Questions?