TED UNIVERSITY

CMPE 491-O SENIOR PROJECT

Project Proposal: **MallMinds**

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MallMinds Project: AI-Powered Multilingual Communication and Navigation System

1. Project Overview

The smart kiosk is an interactive AI-powered system designed to enhance visitor experiences in shopping malls and large indoor spaces. It allows users to communicate through voice or text, find store locations, receive navigation assistance, and connect with a real customer service representative when needed. By integrating advanced artificial intelligence and facial recognition, the kiosk offers a seamless and personalized experience.

2. Key Features

The kiosk incorporates **facial recognition technology** to identify users and provide a tailored experience while maintaining data privacy and security. This enables more efficient and user-friendly interactions.

With **AI-powered interaction**, the system understands user queries through **Natural Language Processing (NLP)** and generates accurate responses using **Retrieval-Augmented Generation (RAG)** technology. This ensures that users receive relevant and up-to-date information.

The kiosk supports **multiple languages**, allowing visitors from different backgrounds to communicate effortlessly. Whether a user speaks English, Spanish, or any other language, the system can understand and respond accordingly.

For ease of use, the kiosk offers **voice and text communication** capabilities. It can **convert speech to text**, enabling users to see their spoken words on screen, and also **read out text responses**, making it accessible for individuals with visual impairments or language barriers.

To improve navigation within shopping malls, the kiosk provides **map and route assistance**. Users can ask for directions to a specific store, and the system will generate the most efficient path to their destination.

Unlike traditional automated support systems, this kiosk includes a **live customer service feature** that connects users with a real human representative instead of a virtual avatar. This ensures a more personalized and effective customer support experience.

3. Use Cases

Visitors looking for a store can simply ask the kiosk for directions, and it will display the route on an interactive map, making navigation effortless.

For customers in need of assistance, the system offers **live support**, allowing them to connect with a real person for quick and reliable help.

Foreign visitors can communicate in their **native language**, as the system supports multilingual interaction, ensuring that language barriers do not hinder their shopping experience.

4. Conclusion

This **AI-powered smart kiosk** improves user experience by providing **multilingual communication, live support, and seamless navigation**. By integrating facial recognition, natural language processing, and real-time customer assistance, the system transforms shopping malls into more accessible and user-friendly spaces.

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Pooject Web Page URL: https://mallminds.github.io