Augmented Reality Campus Navigation System

Abstract:

Navigating college campuses, especially for newcomers, can be challenging. Traditional maps and signage may not always provide the most intuitive or efficient routes. To address this issue, our project proposes the development of an Augmented Reality (AR) Campus Navigation System.

This system will utilize AR technology to overlay digital information onto the physical environment, allowing users to navigate campus more seamlessly. Users will access the system through a mobile application, which will provide real-time directions, points of interest, and interactive features.

Key features of the AR Campus Navigation System include:

1. \*\*AR Wayfinding\*\*: Users can point their smartphone camera at buildings, landmarks, or QR codes to receive visual overlays indicating directions and relevant information.

2. \*\*Customizable Routes\*\*: Users can input their destination and preferences (e.g., shortest route, wheelchair accessibility) to receive personalized navigation routes.

3. \*\*Interactive Campus Map\*\*: The application will include an interactive map of the campus, allowing users to explore various buildings, facilities, and amenities.

4. \*\*Points of Interest\*\*: Users can discover points of interest on campus, such as libraries, cafeterias, and recreational areas, with additional information provided through AR overlays.

5. \*\*Social Integration\*\*: Users can share their location, plans, and favorite spots with friends, fostering a sense of community and facilitating meetups.

6. \*\*Accessibility Features\*\*: The system will prioritize accessibility by providing information on wheelchair ramps, elevators, accessible restrooms, and other relevant facilities.

7. \*\*Offline Mode\*\*: To accommodate areas with poor network coverage, the application will include an offline mode, allowing users to access basic navigation features without an internet connection.

By implementing the AR Campus Navigation System, we aim to enhance the overall campus experience, improve navigation efficiency, and promote inclusivity for all users. This project integrates cutting-edge technology with practical utility, offering valuable resource for students, faculty, staff, and visitors alike.