TED UNIVERSITY

CMPE 491 Senior Project

Project Proposal

“Guid-AR”

Spatial Computing for Indoor Navigation

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Project Page URL: https://berkbelhan.github.io/ar-navigation-senior-project/process/

Project Description

GuidAR is an augmented reality–based indoor navigation system designed to assist users in navigating complex indoor environments such as university campuses. By leveraging spatial computing technologies, including camera and IMU sensor fusion with SLAM algorithms, the system provides real-time localization and intuitive AR navigation guidance.

The application renders arrows, paths, and location labels directly onto the user's view, reducing cognitive load and improving spatial awareness. Guid-AR supports dynamic path planning, multi-floor navigation, and real-time route recalculation, offering an interactive and user-friendly alternative to traditional 2D indoor maps. The system is designed to run on both mobile devices and MetaQuest3, demonstrating the practical application of spatial computing for real-world indoor navigation scenarios.