CMPE 491 “TEDU GuidAR” Senior Design Project Backlog

Task Name	User Story	Sprint Ready	Priority	Status	Effort	Assigned to Sprint
SPRINT 4	No	No	Not Started	In Progress	80	Yes
Advanced Multi-Floor Routing Logic	Improve routing decisions across complex floor transitions	Yes	High	In Progress	12	Yes
Landmark-Based Navigation Support	Use visual landmarks to enhance navigation clarity	Yes	Medium	In Progress	8	Yes
Re-localization After Tracking Loss	Recover user position after SLAM failure	Yes	High	In Progress	12	Yes
Dynamic Obstacle Awareness	Adjust navigation cues based on moving obstacles	No	Medium	Not Started	10	Yes
User Feedback Collection Module	Allow users to report navigation issues	Yes	Medium	In Progress	6	Yes
Map Scaling for Large Buildings	Support larger and more complex indoor spaces	Yes	High	In Progress	14	Yes
Indoor POI (Point of Interest) Management	Add, update, and categorize indoor locations	Yes	High	In Progress	8	Yes
Continuous Localization Accuracy Monitoring	Track navigation accuracy over time	Yes	High	Not Started	10	Yes
SPRINT 3	No	Yes	High	In Progress	114	Yes
Cross-Platform AR Framework Integration	Enable consistent AR behavior across Meta Quest 3 and mobile devices	Yes	High	In Progress	16	Yes
Persistent Spatial Anchors	Allow users to revisit the same indoor map accurately	Yes	High	In Progress	14	Yes
Improved Occlusion Handling	Ensure navigation cues respect real-world obstacles	Yes	Medium	Not Started	10	Yes

Map Persistence & Storage	Save and reload indoor maps	Yes	High	In Progress	12	Yes
User Calibration Flow	Guide users through initial calibration process	Yes	Medium	In Progress	8	Yes
Gesture-Based Interaction	Enable gesture controls for navigation actions	Yes	Medium	In Progress	12	Yes
Voice Command Support	Allow hands-free destination selection	No	Medium	Not Started	10	Yes
Environmental Lighting Adaptation	Adjust AR visuals to lighting conditions	Yes	Medium	In Progress	8	Yes
Navigation Accuracy Evaluation	Measure localization and path accuracy	Yes	Medium	In Progress	10	Yes
Battery & Resource Optimization	Reduce power and CPU/GPU usage	Yes	High	Not Started	8	Yes
Mid-Project DEMO Preparation	Prepare demo for stakeholders	Yes	High	Complete	6	Yes
SPRINT 2	No	Yes	High	In Progress	141	Yes
SLAM Algorithm Integration	Enable real-time localization and mapping	Yes	High	In Progress	20	Yes
Camera & IMU Sensor Fusion	Combine camera and IMU for stability	Yes	High	In Progress	14	Yes
AR Path Visualization	Overlay arrows and navigation cues	Yes	High	In Progress	16	Yes
Indoor Map Data Structure	Define building data representation	Yes	Medium	In Progress	10	Yes
Destination Search Module	Search locations	Yes	High	In Progress	12	Yes
Path Planning Algorithm	Compute optimal route	Yes	High	In Progress	15	Yes

Dynamic Route Update	Recalculate route	Yes	High	In Progress	12	Yes
Multi-Floor Navigation	Support stairs and elevators	Yes	Medium	In Progress	10	Yes
AR UI Design	Simple interface	Yes	Medium	In Progress	8	Yes
Performance Optimization	Maintain 60 FPS	Yes	High	In Progress	10	Yes
System Integration Testing	Test full system	Yes	High	Not Started	8	Yes
Error Handling	Prevent crashes	Yes	Medium	In Progress	6	Yes
SPRINT 1	No	Yes	High	Complete	24	Yes
Requirement Analysis and Use Case Definition	Gather functional and non-functional requirements and define scope.	Yes	High	Complete	4	Yes
Establish Contact with Potential Partner	Reach out for feedback/sponsorship.	Yes	High	Complete	12	Yes
Technology Stack Selection	Choose AR/SLAM tools and setup environment.	No	Medium	Complete	8	Yes
Preliminary SLAM Feasibility Test	Initial experiments using sensors.	No	Medium	Complete	0	Yes