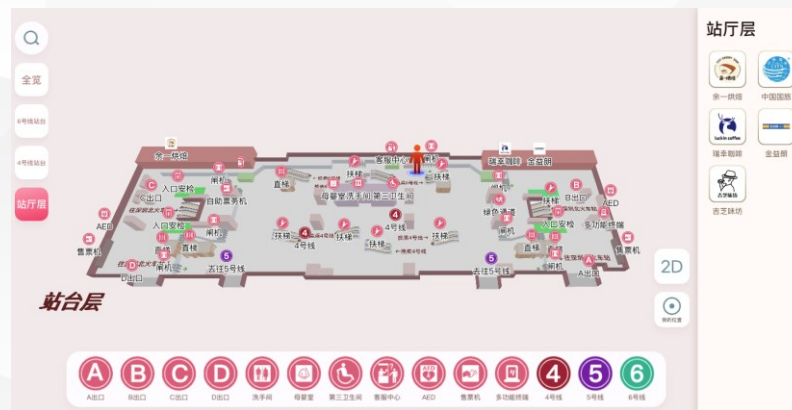


AR Intelligent Navigation: Leading the Future

20/12/2024

Urban rail transit stations are progressively advancing towards enhanced efficiency and reduced congestion, driving the need for intelligent upgrades to optimize operational services and productivity. Shenzhen North Station, a critical hub within the Shenzhen metro network, experiences substantial daily passenger flow, accompanied by increasing demand for precise navigation and real-time information services. This project aims to elevate the navigation and interactive service capabilities of Shenzhen North Station's Line 4 by integrating cutting-edge technologies. The initiative seeks to enhance travel efficiency and enrich passenger experiences, aligning with the station's role as a pivotal node in the urban transit system.

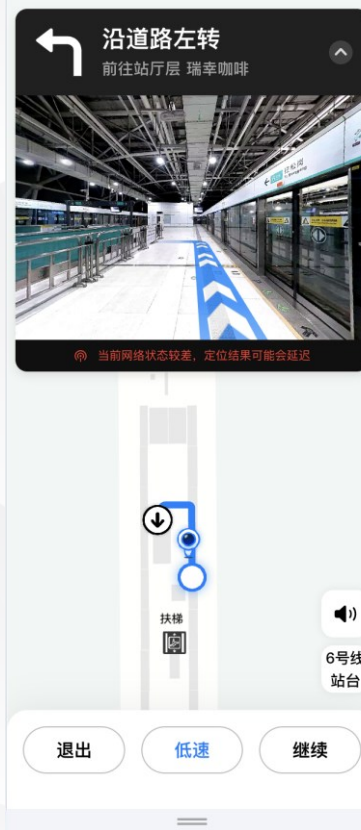


This project leverages visual recognition and Bluetooth beacon positioning technologies to deliver advanced navigation solutions. Through the MTR Live+ mini program, passengers can access dual-mode real-time navigation services, combining AR-based real-world guidance with VR-powered virtual scenes. This innovative approach enhances real-time navigation and significantly improves the overall travel experience.



港铁(深圳)公司

VR Navigation



14/1/2025

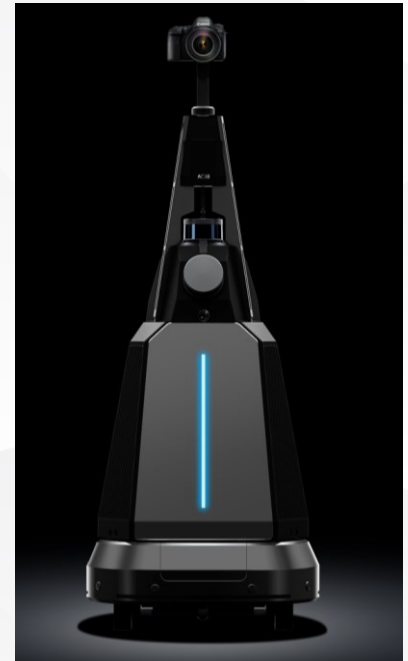
AR Navigation



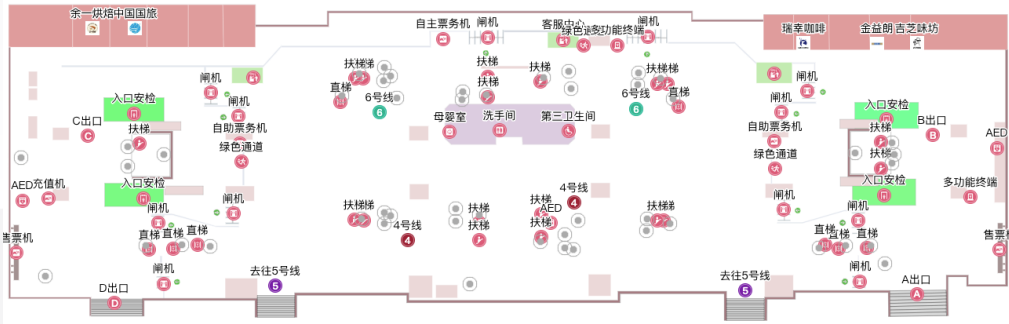
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Advanced Spatial Modeling and Data Acquisition Technology

- Innovative Indoor 3D Mapping Robot
 - Compact design: 0.6 meters in diameter, adaptable to diverse indoor environments.
 - Equipped with multi-sensor technology: **LiDAR**, IMU, industrial-grade camera, and panoramic camera.
- High-Precision Data Collection
 - Capable of automatic, efficient, and stable generation of **centimeter-level** meshes and scene models.
 - Utilizes advanced **SLAM** algorithms for large-scale and highly accurate spatial modeling.
- Real-World Scene Capture
 - Panoramic imaging technology captures large-scale scenes with x, y, z coordinates and rotational orientation.
 - Highly efficient: approximately 110 images per 10,000 square meters.



A complete 3D scan of Shenzhen North Station was conducted, capturing 332 panoramic data points across the station. This process generated 2TB of colored point cloud files and annotated 193 Points of Interest (POIs), including destinations, facilities, and stores. The collected data enabled the creation of detailed network maps, precise labeling of station facilities and shop information, and a fully visualized presentation of the station's layout.





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