Tianxiang Zhang

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Education

Wuhan University — Wuhan, China
M.S. in Computer Application Technology, LIESMARS — Sep. 2023 – Present
Supervisor: Prof. You Li [Page]

Wuhan University — Wuhan, China
B.S. in Electronic Engineering, GPA 3.91/4.0, Rank: 7/123 — Sep. 2019 – Jun. 2023

Research Interests

LiDAR SLAM, Multi-Sensor Fusion, Seamless Positioning, 3D Reconstruction, Robotics.

Publications

Conference paper

- **T. Zhang**, X. Zhang, Z. Liao, X. Xia and Y. Li*. **AS-LIO**: Spatial Overlap Guided Adaptive Sliding Window LiDAR-Inertial Odometry for Aggressive FOV Variation. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). Abu Dhabi, UAE, Oct. 2024. [Paper] [Demo]

Research Experience

Multi-Sensor fusion SLAM — LIESMARS, Wuhan University
Supervisor: Prof. You Li — Sep. 2023 – Present

- **LiDAR-Inertial SLAM**: Research on scene-interpretable and error-analyzable LiDAR-Inertial SLAM algorithms for challenging scenarios like LiDAR degradation and high-dynamic motion.
- **LiDAR-Inertial-Visual Fusion**: Research on the fusion of LiDAR, IMU, and Camera to enhance localization and mapping performance, aiming to achieve real-time and high-quality geometry construction and color rendering.
- **LiDAR-MWR Fusion**: Research on the synergistic fusion of LiDAR and 4D mmwave RaDAR, to achieve degradation-resistant and dynamic-filterable odometry in adverse weather and low geometric constraint scenarios for vehicles.
- **Multi-Sensor Navigation Platform**: Work on the low-cost, wearable multi-sensor integrated navigation system for seamless indoor and outdoor positioning or non-exposed space.

Work Experience

Internship — Research Institute, MEGVII Technology
Autopilot Algorithm Engineer — Nov. 2022 – Mar. 2023

- **Automated Valet Parking (AVP)**: Responsible for the localization and perception modules for vehicles in AVP scenarios. Fusing fisheye cameras, wheel odometry and IMU to enable real-time, high-precision positioning for safe AVP.

Awards and Honors

- Outstanding B.S. Graduate of Wuhan University, 2023.
  (Top 10% of total graduates, equivalent to First-class degree with honours.)
- Outstanding Winner & AMS Award of the Interdisciplinary Contest In Modeling (ICM), 2022.
  (Top 0.16% of overall teams. [School News: Team 1])
- First Prize of National College Students "Intel Cup" Electronic Design Competition, 2022.
  (Top 6% of overall teams. [School News: Team 2])
- Liu Daoyu Presidential Scholarship, 2022. (Each year only 36 students from the whole school)
- Outstanding Student Scholarship of Wuhan University, 2020-2023.
- First prize of Wuhan University "Revitalization Cup" college football competition, 2021.

Languages and Skills

Languages: Chinese(native), English
Skills: C/C++, Python, Matlab, Linux, ROS, OpenCV, PCL, SolidWorks, Git