Dong Li

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EDUCATION AND EXPERIENCE

University of Macau — **Macau**
*Research Assistant. at FST and SKL-IOTSC, Supervised by **Prof.Hui Kong*** — *Jun. 2023 - Jun. 2024*

Southern University of Science and Technology — **Shenzhen, China**
*Research Assistant. at AMAS Lab, Supervised by **Prof.Zhiyun Lin, IEEE Fellow*** — *Jun. 2022 - Jun. 2023*

Hefei University of Technology — **Hefei, China**
B.Eng. in Communication Engineering — *Sept. 2018 - Jun. 2022*

PUBLICATIONS

- **Dong Li**, L. Chen, C.-Z. Xu, and H. Kong, "**UMAD: University of Macau Anomaly Detection Benchmark Dataset**," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2024.
- Y. Chen, **Dong Li**, and Z. Yan, "**Particle Filtering and Smoothing with Multi-Step Random Measurement Delays and Packet Losses**," Under Review, 2024.

RESEARCH INTEREST

- Change Detection, Anomaly Detection, Image Alignment, Homography Estimation
- Visual-SLAM, Semantic-SLAM, Dynamic-SLAM, Object-SLAM, Higher-level Scene Understanding
- Active-SLAM, Robotic Exploration, Informative Path Planning

HONORS AND AWARDS

- 3rd of International Underwater Robot Competition, 2020
- First Prize of National Undergraduate Electronics Design Contest in Anhui Province, 2020
- Second Prize of RoboMaster Robotics Competition ,2020
- Third Prize of National University Student Social Practice and Science Contest on Energy Saving & Emission Reduction, 2020
- Individual Scholarship, Hefei University of Technology, 2019, 2020, 2021
- During Dong Li's undergraduate period, he won a total of five national and international awards, more than ten provincial and ministerial awards, four patents, and one software copyright in the field of robotics and electronic design, 2018-2022

EXPERIENCE

Faculty of Science and Technology(FST), and SKL-IOTSC — **University of Macau**
Research Assistant — *Jun. 2023 - Jun. 2024*

During my time at UM, We developed the first large-scale reference-based anomaly detection benchmark dataset, which was collected by robots in real-world environments. This dataset consists of 6 distinct scenes, 120 sequences, 26k image pairs, and a comprehensive set of 140k object annotation labels. We proposed an adaptive warping method to achieve high-precision image alignment. You can check out the video link for this project.

AMAS Lab — **Southern University of Science and Technology**
Research Assistant — *Jun. 2022 - Jun. 2023*

During my time at SUSTech, I Engaged in the construction and testing of a mobile grasping robot platform, which includes the development of a tag-based grasping system and localization perception systems using RFID, 3D/2D Lidar, and millimeter-wave radar. Additionally, involved in the research and implementation of dynamic SLAM, monocular SLAM, and object-level SLAM, with a particular focus on leveraging object information to constrain and optimize SLAM systems. I also mentored some SUSTech undergraduates on relevant robotic course projects,

and these undergraduates later received offers from top graduate programs, such as Cornell University, the University of Pennsylvania, and the National University of Singapore.

HFUT Robotics Team **Hefei University of Technology**

As a Co-founder and Algorithm Group Leader *Sept. 2019 - May 2021*

As one of the founders of the robotics team at Hefei University of Technology(HFUT) and the leader of the algorithm group, I led the team to participate in the RoboMaster Robotics Competition hosted by DJI. I was primarily responsible for algorithm group training, progress management, and the development of the vision algorithm system for multiple robots. The most interesting aspect was that my friend and I built a robotics enthusiast team from zero. The team has now grown to over 60 members. Work on robot detection, tracking, and localization using intel realsense D435i. Build autonomous robot 2D laser SLAM, navigation, and path planning modules.

National College Students' Innovative Entrepreneurial Training Plan Program **HFUT**

Major Contributor *Apr. 2020 - Apr. 2022*

Project Name: Research on autonomous transportation control technology of AGV based on Lidar SLAM
Work on 3D lidar and visual fusion SLAM algorithm which can run in real-time in intel NUC. The project represents the Hefei University of Technology to participate in The 15th National College Student Innovation and Entrepreneurship Conference(4/1369).

Electronic Information Innovation Lab **Hefei University of Technology**

Vice President of the Student Lab *Sept. 2019 - Jun. 2022*

Work on object detection, machine vision, and dimension measurement on embedded devices OpenMV and STM32. Won the First Prize in the 2020 National Undergraduate Electronics Design Contest in Anhui Province, and the first place in the group. As the Vice President of the student lab, responsible for the selection, training, and management of new and old members.

SERVICES

- **Guest of 3DCVER**: 3DCVER is a 3D visual researcher platform in China, as a guest(57/4700+), Dong Li mainly shares 3D visual related papers and answers the question of beginners, 2022-Present
- **Vice President of Electronic Information Innovation Student Lab**: This is an electronic technology hobbyist group composed of 70+ undergraduate members of the Hefei University of Technology, 2020-2021
- **Teaching Assistant at HFUT**: Electronic Information Innovation Practice Course. Fall 2019-2020 and Fall 2020-2021
- **Vice President of Hefei Pearl Home**: This is a public welfare organization for college students in Hefei, 2019-2020

SKILLS

- **Programming**: Python, C/C++, MATLAB, Javascript
- **Technologies**: Pytorch, OpenCV, ROS, Linux, ORB-SLAM2/3, VINS-Mono/VINS-Fusion
- **Embedded Controller**: STM32, MCS-51, Arduino, K210, OpenMV
- **Languages**: Mandarin (native), English (fluent)