

Lebin LIANG

+86-13610140855 lb.liang@siat.ac.cn | LebinLiang.github.io



 [LebinLiang](#) |  [LebinLiang](#) |

Shenzhen, Guangdong, China

OBJECTIVE

Actively seeking overseas PhD positions for Fall 2026 enrollment or later, with a dedicated research focus on Human-Computer Interaction (HCI) and Human-Robot Interaction (HRI).



EXPERIENCE



- **Sony China Research Institute (RDC Shenzhen)**  Jan 2025 - Present
Robotics Inter Shenzhen, China
 - Designed and developed lower-level systems for legged robots, focusing on multi-joint motor and servo control using STM32.
 - Responsible for PCB hardware design of driver boards, incorporating CAN, high-speed RS485, and EtherCAT communication protocols.
 - Engaged in dynamics modeling, reinforcement learning for motion control, and Sim2Real deployment for legged robots within the Isaac Lab environment.
 - Implemented safety features including online disconnection-reconnection detection, emergency power-off, and power monitoring systems.
- **DJI RoboMaster High School Robotics Camp**  Summer/Winter 2020 - 2023
Embedded Systems Teaching Assistant Shenzhen, China
 - Planned and organized multiple STEAM robotics camps (100+ students each) focusing on robotics and embedded systems.
 - Designed and delivered an embedded systems curriculum centered on an "Indoor Robot Logistics and Transportation" theme.
 - Developed ROS (Robot Operating System) driver packages for RoboMaster EP robots and created comprehensive teaching materials.

EDUCATION

- **University of Chinese Academy of Sciences (UCAS)** Sept 2023 - June 2026 (Expected)
M.S. in Electronic Information Beijing and Shenzhen, China
 - GPA: 3.77/4.0
 - Admitted through Postgraduate Recommendation Program (Tuition-Waiver Scholarship)
 - Shenzhen Institutes of Advanced Technology (SIAT)
- **South China Agricultural University (SCAU)** Sept 2019 - June 2023
B.Eng. in Agricultural Mechanization and Automation Guangzhou, China
 - GPA: 4.36/5.0 (Major Rank: 1st/Department)
 - Institution part of the "Double First-Class University Initiative"

PROJECTS

- **4WD-4WS Autonomous Sprayer Navigation Control System** 2021 - 2023
Project Lead, National Student Innovation Program  [Video](#)
 - Led the development of a 4-wheel-drive, 4-wheel-steering agricultural sprayer with RTK-GPS & IMU for precise autonomous row shifting and omnidirectional path tracking in large-scale fields.
 - Constructed an 8-DOF chassis kinematic model and implemented PID-based trajectory tracking algorithms.
 - Designed the embedded controller (STM32-based) and a comprehensive vehicle communication system integrating CAN bus and USB.
 - Outcome: Project received "Excellent" completion status, secured 1 software copyright, and co-authored 1 EI-indexed research paper.
- **Indoor Autonomous Quadrotor UAV System with RGBD & LiDAR Fusion** 2022 - 2023
Individual Project  [Video](#)
 - Developed VIO (Visual-Inertial Odometry) localization utilizing an RGBD camera for robust indoor UAV positioning.
 - Implemented precise UAV indoor position control based on VIO data; integrated single-line LiDAR for basic navigation and 3D environmental reconstruction using ROS.
 - Managed UAV hardware selection (PX4 flight controller), component integration, and system assembly.

- Deployed and calibrated VINS-Mono; conducted comparative analysis of VIO algorithms including ORB-SLAM2.
- Engineered LiDAR point cloud projection transformation and constructed occupancy grid maps for navigation.
- **Autonomous Infantry Robot Development (RoboMaster Competition)** 2021 - 2022
Navigation Team Lead, Taurus Robotics Team (SCAU)  Video
 - Led a team of [Number, e.g., 5] students in developing navigation and perception systems for autonomous infantry robots in the RoboMaster AI Challenge.
 - Implemented full-field localization and autonomous navigation using Mecanum wheel encoder odometry, IMU, and LiDAR data fusion within a ROS framework.
 - Utilized computer vision (OpenCV) for enemy armor plate recognition and fully autonomous target tracking and engagement.
 - Built and maintained the ROS-based software architecture, including a Gazebo simulation platform, and managed low-level hardware (STM32) and high-level software communication.
- **National University Smart Car Competition** 2020 - 2021
Team Captain (2021) / Member (2020)  Video
 - **As Captain (2021, iFlytek Smart Restaurant Group):** Led team to develop a Mecanum wheel robot; implemented indoor localization and multi-task allocation (QR code recognition, target detection) using LiDAR & IMU; built ROS-based multi-task scheduling framework. (National First Prize)
 - **As Member (2020, Outdoor Opto-Electronic Group):** Contributed to Ackermann steering car for indoor localization & path planning; designed its embedded controller.

PATENTS AND PUBLICATIONS


C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

- [C1] **Lebin Liang**, Haotian Rao, Guohao Shen. (2023). **A Real-time Framework for UAV Indoor Self-Positioning and 3D Mapping Base on 2D Lidar, Stereo Camera and IMU**. In *Proceedings of the IEEE International Conference on Real-time Computing and Robotics (RCAR 2023)*, pp. Datong, China. DOI: 10.1109/RCAR58764.2023.10249971. (First Author)
- [J1] Z. Zhou, X. Yu, **Lebin Liang**, et al. (2023). **Design and Experiment of Navigation Control System for Translational Row Shifting of Four-Wheel Steering Boom Sprayer**. *Transactions of the Chinese Society for Agricultural Machinery*, 54(7), 12-22. DOI: 10.6041/j.issn.1000-1298.2023.07.007. (Second Student Author)

SKILLS

- **Languages:** English (Proficient, CET-6), Mandarin (Native), Cantonese (Native)
- **Programming:** C++, Python, C, Shell Scripting
- **Technologies & Software:** ROS (Melodic, Noetic), Linux (Ubuntu), Git, Docker, STM32 Microcontrollers, FreeRTOS, ESP32, TensorFlow, PyTorch (Basic)
- **Robotics & AI:** SLAM (VINS-Mono, ORB-SLAM2), Visual-Inertial Odometry (VIO), Path Planning (A*, Dijkstra), Computer Vision (OpenCV), Control Systems (PID), Reinforcement Learning (Fundamentals), Sensor Fusion (LiDAR, IMU, Camera)
- **CAD/EDA Tools:** Altium Designer, SolidWorks, AutoCAD, KiCad (Basic), MATLAB, Gazebo, Isaac Lab

HONORS AND AWARDS

- **IEEE ICRA 2024 RoboMaster University Sim2Real Challenge** June 2024
Awarded by IEEE International Conference on Robotics and Automation 
 - Achieved **Second Prize** in a competitive university-level Sim2Real robotics challenge.
- **21st National Collegiate RoboMaster Competition - Super Confrontation** Aug 2022
Organized by DJI 
 - Secured **National First Prize** as a key member of the university team.
- **21st National Collegiate RoboMaster Competition - University League (Automated Infantry)** Nov 2022
Organized by DJI 
 - Awarded **First Prize** for performance in the automated infantry robot category.
- **16th National University Smart Car Competition - iFlytek Smart Restaurant Group** Aug 2021
Organized by Ministry of Education, China 
 - Achieved **National First Prize**, demonstrating excellence in autonomous systems and task completion.
- **Guangdong Provincial Collegiate Electronic Design Contest** Oct 2020
Education Department of Guangdong Province 
 - Awarded **Provincial First Prize** for innovative electronic system design.

LEADERSHIP EXPERIENCE

- **Navigation Team Lead**

2021 - 2022

Taurus Robotics Team, South China Agricultural University

- Led a team of 5 students in developing and implementing navigation and perception algorithms for RoboMaster autonomous robots.
- Coordinated algorithm development (SLAM, path planning, obstacle avoidance), simulation in Gazebo, and field testing, significantly improving robot autonomy and competitive performance.
- Responsible for technical documentation, new member training, and strategic planning for the navigation sub-team.

- **Project Lead**

2021 - 2023

4WD-4WS Autonomous Sprayer (National Student Innovation Program)

- Directed all project phases from conceptualization and system design to final implementation, testing, and paper publication.
- Managed team tasks, resources, and timelines for 3 core members, leading to successful project completion and "Excellent" evaluation.

- **Team Captain**

2020 - 2021

National University Smart Car Competition (iFlytek Smart Restaurant Group)

- Led a team of 4 in system design, algorithm development (ROS-based multi-task scheduling, navigation), and competition strategy, achieving National First Prize.
- Coordinated interdisciplinary efforts for robot construction, programming (C++/Python), and debugging under tight deadlines.

ADDITIONAL INFORMATION

- **Interests:** Robotics (Legged, Mobile, UAVs), AI for Robotics, Embedded Systems Design, Autonomous Navigation, Computer Vision, Control Systems, Contributing to Open-Source Robotics Projects.
- **Portfolio:** LebinLiang.github.io
- **Availability for PhD:** Fall 2026 or later.