Jun Luo

Email: luojun@stu.cqu.edu.cn **Telephone:** +86 15025390690
Date of Birth: 2000.12.01 **Native place:** Chongqing China
Address: The State Key Laboratory of Mechanical Transmission for Advanced Equipment. College of Mechanical and Vehicle Engineering, Chongqing University, Chongqing 400044, China

Ph.D. supervisor: Prof. Hua-yan Pu (phygood_2001@shu.edu.cn)

Education

2022.9 to now Chongqing University Mechanical and electronic engineering (A- in China) Master of Engineering (GPA:3.68/4, 1/337)

2018.9-2022.6 Yanshan University Mechanical design, manufacture and automation (A- in China) Bachelorof Engineering (GPA:3.53/4.5, 7/188)

Achievements

- **Academic achievements: 6 papers have been published/accepted** (4 SCI papers, 1 IROS 2024, 1 ICRA 2024, 1 SCI papers under review, 3 domestic invention patents have been applied for.)
- **Scholarship: National scholarship for graduate student** (2023, 1 time), School level scholarship of A(2 times)
- **Personal honor:** Excellent graduate of Hebei Province in 2022, Excellent student of Chongqing University in 2022.

Research direction

- **Research field**: Visual SLAM, Semantic segmentation, Robot,
- **The PhD research field plan**: Robot swarm collaborative SLAM, Lightweight model target detection and improve the accuracy of mapping.

Published/Accepted Papers

[1] **Luo J.**, Wang G, et al. BE-SLAM: BEV-Enhanced Dynamic Semantic SLAM with Static Object Reconstruction. ***in the Proceedings of the 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)***

[2] **Luo J.**, Wang G, et al. Strip running deviation monitoring and feedback real-time in smart factories based on improved YOLOv5 [J]. ***Sustainable Computing: Informatics and Systems***. 2023, 40: 100923. (SCI, Q1)

[3] Pu H. Y., **Luo J**., et al. Visual SLAM Integration with Semantic Segmentation and Deep Learning: A Review [J]. ***IEEE Sensors Journal***, vol. 23, no. 19, pp. 22119-22138. (SCI, Q1, **Top**)

[4] Huang T, Wang G, Liu H. L, **Luo J**., et al. A Framework for Real-Time Generation of Multi-Directional Traversability Maps in Unstructured Environments. ***in the Proceedings of the 2024 IEEE International Conference on Robotics and Automation (ICRA 2024)***

[5] Wang G, Liu H. L, **Luo J.**, et al. Reconstruction of Smooth Skin Surface Based on Arbitrary Distributed Sparse Point Clouds[J], ***IEEE Transactions on Industrial Informatics***, vol. 19, no. 11, pp. 10663-10673. (SCI, Q1, **Top**)

[6] Huang T, Wang G, Wu, L, **Luo J**., et al. MD-TLCF: Miner Distance Detection Based on Trajectory-Based Low-Confidence Filter. ***IEEE Transactions on Instrumentation and Measurement***, vol. 73, pp. 1-13, 2024. (SCI, Q1, **Top**)

Submitted/ Working on Papers

[1] Pu H. Y., **Luo J**., et al. Visual inertial SLAM based on spatiotemporal consistency optimization in diverse environments (Subject to ***Journal of Field Robotics***, Under review).

[2] **Luo J.**, Wang G, et al. BE-SLAM+: BEV inertial co-enhanced Dynamic Semantic SLAM (Working on, plan to submit ***IEEE/ASME Transactions on Mechatronics***)

International Conference Presentations

[1] The 10th China Command and Control Conference April 21 – April 24, 2023, at Beijing, China

[2] The 4th National SLAM Technical Forum July 21 – July 23, 2023, at Xiamen, China

[3] The National Defense Science and Technology Highland Forum Sep. 24 – Sep. 28, 2023, at Changsha, China

[4] Autonomous Robotic Technology Seminar Nov. 25 –Nov. 26, 2023, at Guangzhou, China

[5] The 6th Western University mechanical students Forum (**Invited presentation**) June 16- June 17, 2024, at Xi'an China

Domestic Invention Patents

[1] Pu H. Y, **Luo J**, Wang G, Huang T, Liu H. L, Xiao D. Y, Luo J. The robot autonomy facing the harsh environment in the field can be achieved by means of methods and robots. China, Application number: CN202310250617.8, Application date: 2023.03.15.

[2] Wang G, **Luo J**, Pu H. Y, Liu H. L, Xiao D. Y, Luo J. A method and system for constructing terrain semantic map in field environment. China, Application number: CN202310248101.X, Application date: 2023.03.15.

[3] Pu H. Y, **Luo J**, Wang G, Liu H. L, Xiao D. Y, Luo J. Zhen X. Y, Shao S. The invention relates to a method, system and product of constructing terrain semantic map based on binocular camera. China, Application number: CN202310706925.7, Application date: 2023.06.14.

Adjunct Research Positions

[1] "IEEE Sensors Journal" reviewer.

Skills

- **Programming:** Familiar with C/C++, ROS, Python;
- **Algorithm:** Visual SLAM (ORB-SLAM2/3, DSP-SLAM, VINS-Fusion, etc.), Lidar SLAM(Loam, Lego-Loam, Livox-Loam, etc.),Object Detection and Semantic segmentation (YOLO, Openmmlab).
- **Language:** *Chinese*: first language; *English*: first foreign language, CET-6.

Research Project Experience

- **System Engineering Research Institute of China State Shipbuilding Corporation**

  Trainee engineer 2022.8-2022.9

  - Based on xloong-common framework, algorithm program deployment and maintenance (virtual boat, real boat);
  - Cluster cooperative formation algorithm test and virtual boat state maintenance in server are carried out in simulation environment;
  - Data acquisition based on Kirin (Linux) system, and participate in data analysis.;

- **Chongqing Chang'an Industry (Group) Co., LTD. Shenzhen Branch (Intelligent Development Department)** **Trainee engineer 2023.1-2023.7**

  - Optimization and real vehicle deployment of object detection Algorithm based on Pytorch and onnx.
  - Obstacle recognition based on solid state Lidar and SLAM algorithm development based on solid state Lidar.
  - Participate in the commissioning of the real vehicle formation, and participate in solving the communication, data transmission, RTK positioning and other problems encountered in the commissioning of the real vehicle.
  - Data preprocessing, dataset format conversion.

- **Chang'an Industry Group key model equipment technology research projects**

  Main member 2023.7-2023.11

  - Development and deployment of Marine target detection algorithm based on ROS.
  - Multipurpose data collection and processing