

# Xubo Luo

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Homepage: <https://luoxubo.github.io>

## EDUCATION

**University of Chinese Academy of Sciences** Beijing, China  
*M.S. in Computer Applied Technology* Sep. 2023 - Present

- GPA: 3.61/4.00; work with Prof. *Xue Wan* and Prof. *Wei Zhang*
- Relevant coursework: Deep Learning(91), Pattern Recognition and Machine Learning(92)
- Research interests: robotics vision, vision-language navigation, visual localization, and SLAM

**Shanghai University of Finance and Economics** Shanghai, China  
*B.E. in Computer Science and Technology* Sep. 2019 - Jun. 2023

- GPA: 3.48/4.00 (Rank: 7/55); work with Dr. *Tsz Chiu Kwok*
- Relevant coursework: Linear Algebra(94), Discrete Mathematics(98), Data Structure(91), Computer Network(93)
- Research interests: image fusion, deep learning

## SELECTED PUBLICATIONS

1. **X. Luo**, L. Wang, J. Zhang, D. Niu, "HBANet: A hybrid boundary-aware attention network for infrared and visible image fusion," *Computer Vision and Image Understanding*, 2024. [[PDF](#)] [[Code](#)]
2. **X. Luo**, Y. Tian, X. Wan, J. Xu, T. Ke, "Deep learning based cross-view image matching for UAV geo-localization," *International Conference on Service Robotics (ICoSR, oral)*, 2022. [[PDF](#)] [[Code](#)]
3. **X. Luo**, X. Wan, Y. Gao, Y. Tian, W. Zhang, L. Shu, "JointLoc: A Real-time Visual Localization Framework for Planetary UAVs Based on Joint Relative and Absolute Pose Estimation," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS, oral)*, 2024. [[PDF](#)] [[Code](#)]
4. **X. Luo**, Z. Zhao, S. Zhang, X. Wan, W. Zhang, L. Shu, "DVD-MapAL: Deep Visual Feature-Driven Map-Assisted Localization for Planetary Spacecraft Exploration," *IEEE Transactions on Field Robotics*, 2025. [[PDF](#)] [[Code](#)]
5. **X. Luo**, S. Zhang, X. Wan, W. Zhang, L. Shu, "Learning to Anchor Visual Odometry: KAN-Based Pose Regression for Planetary Landing.," *IEEE Robotics and Automation Letters*, 2025. [[PDF](#)] [[Code](#)]
6. **X. Luo**, A. Wu, H. Han, X. Wan, W. Zhang, L. Shu, "StepNav: Structured Trajectory Priors for Efficient and Multimodal Visual Navigation," *IEEE International Conference on Robotics & Automation (ICRA, oral)*, 2026. [[PDF](#)][[Code](#)]

## RESEARCH EXPERIENCE

**Shandong University** Jul. 2020 - Aug. 2022

*Research Assistant to Prof. Caiming Zhang and Prof. Xiuyang Zhao*

- Developed algorithms for artifact removal in CT images, improving image quality.

- Implemented multi-modal image fusion techniques (infrared & visible, CT & MRI) to enhance diagnostic accuracy.
- Assisted in medical image segmentation tasks, contributing to the precision of image analysis.

**Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences** Sep. 2022 - Aug. 2023

***Research Assistant to Prof. Xue Wan***

- Conducted visual localization in earthquake-affected regions using remote sensing images.
- Assisted in the development of a multi-modal benchmark for lunar surface exploration.
- Developed a geography-based visual localization algorithm for drones, enhancing positioning accuracy.

## **AWARDS & HONORS**

- |   |      |
|---|------|
| • Third Prize Scholarship, Shanghai University of Finance and Economics | 2020 |
| • ICPC Regional Competition Honorable Mention, ACM-ICPC                 | 2021 |
| • Honor Graduate, Shanghai University of Finance and Economics          | 2023 |
| • Student Travel Grant, IEEE Robotics and Automation Society            | 2024 |
| • Merit Student, University of Chinese Academy of Sciences              | 2025 |
| • Second Place in IROS RoboSense Challenge, IEEE/RSJ                    | 2025 |
| • Innovation Prize in IROS RoboSense Challenge, IEEE/RSJ                | 2025 |
| • National Scholarship, Ministry of Education of China                  | 2025 |

## **PROFESSIONAL SERVICES**

**Reviewer to:**

- IEEE Robotics and Automation Letters (RAL 2024, 2025, 2026)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE/SICE International Symposium on System Integrations (SII 2025, 2026)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2025, 2026)
- IEEE International Conference on Robotics & Automation (ICRA 2026)

## **SKILLS**

- Programming languages & Software: C/C++, MATLAB, Python, Linux, etc.
- Languages: Mandarin Chinese (Native), English (IELTS 7.0)