Que Liu

https://que-liu.github.io/
(+86)13107882623 queliu@outlook.com github.com/que-liu

Education

University of Shanghai for Science and Technology **Sept 2021 – Jun 2026 (Expected)**
Bachelor's Degree in Intelligence Science and Technology *Shanghai, China*

- GPA: 3.52/4.00, **Major GPA**: 3.89/4.00
- Relevant Course: Machine Vision (92), Autonomous Mobile Robots (98), Machine Learning (93), Robot Vision System and Measurement (92), Natural Language Understanding (95), Intelligent Simulation (91)

Publications

1. Xing, Yunhao, **Que Liu**, Jingwu Wang, and Diego Gomez-Zara. **"SMoRe: Enhancing Object Manipulation and Organization in Mixed Reality Spaces with LLMs and Generative AI."** *arXiv [Cs.HC]*, 2024. Available at: http://arxiv.org/abs/2411.11752.

2. Muhammad Salman Abid, Mrigank Pawagi, Sugam Adhikari, Xuyan Cheng, Ryed Badr, Md Wahiduzzaman, Vedant Rathi, Ronghui Qi, Choiyin Li, Lu Liu, Rohit Sai Naidu, Licheng Lin, **Que Liu**, Asif Zubayer Palak, Mehzabin Haque, Xinyu Chen, Darko Marinov, and Saikat Dutta. **"GlueTest: Testing Code Translation via Language Interoperability."** In *Proceedings of the 40th International Conference on Software Maintenance and Evolution (ICSME'24) - NIER Track*, 2024.

Research Experience

Advanced Control Systems Lab **May 2025 – Present**
Undergraduate Researcher supervised by Prof. Andrea L'Afflitto *Virginia Tech*

- Applied genetic algorithms and multi-objective optimization to tune control gains, balancing tracking error, control effort, and stability.
- Conducted sensitivity analysis of system parameters, identifying stability regions and robustness limitations in UAV control.
- Explored and applied concepts of Model Reference Adaptive Control (MRAC) in simulation to evaluate controller performance.

Human Interaction and RObotics [HIRO] Group **Apr 2025 – Present**
Remote Undergraduate Researcher supervised by Prof. Alessandro Roncone *University of Colorado Boulder*

- Developed procedurally generated alien terrain in Unity to support VR-based human-robot collaboration experiments.
- Integrated robot navigation with hybrid control for natural robot behavior on uneven terrain.
- Designed and implemented puzzle-solving mechanisms in VR environments to study human-robot collaboration.

Human-Computer Interaction Research Group **Jul 2024 – Jan 2025**
Undergraduate Researcher supervised by Prof. Diego Gómez-Zará *University of Notre Dame*

- Integrated depth camera with visual SLAM (Simultaneous Localization and Mapping) on ROS to achieve scene understanding and environmental mapping in mixed reality setups.
- Developed a VR meeting room prototype using Unity and Photon Networking to create multi-user, immersive environments, improving virtual collaboration in distributed teams.
- Leveraged the Generative AI and Large Language Models for better scene understanding and object manipulation of users in mixed reality applications.

Summer Undergraduate Research in Software Engineering **Aug 2023 – Jan 2024**
Remote Undergraduate Researcher supervised by Prof. Darko Marinov *University of Illinois Urbana-Champaign*

- Assisted in establishing a pipeline of clients libraries for testing compatibility and stability of client integrations to validate the partial translation.
- Leveraged Linux environments for efficient development, utilizing Docker containers for consistent development setups and scaling applications. Utilized GitHub for team collaboration and code review.
- Modified and optimized XML configuration files for better modularity and compatibility across multiple Maven-based Java projects.

Skills

Programming: Python, C#, C, C++, Java, Matlab, SQL
Tools and Frameworks: Unity, ROS, Docker, Git, PyTorch
Engineering: RealSense, Altium, Keil
Languages: English (TOEFL: 106), French (intermediate), Chinese (native)