Que Liu

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Education

University of Shanghai for Science and Technology **Sept 2021 – Jun 2025 (Expected)**
Bachelor's Degree in Intelligence Science and Technology *Shanghai, China*

Relevant Coursework

- Machine Vision (92)
- Autonomous Mobile Robots (98)
- Machine Learning (93)
- Robot Vision System and Measurement (92)
- Intelligent Simulation (91)
- Natural Language Understanding (95)

Research Experience

AIoT Lab at Institute of Data and Information **Oct 2024 – Present**
Undergraduate Researcher supervised by Prof. Xinlei Chen *Shenzhen International Graduate School, Tsinghua University*

- Developed and implemented velocity control algorithms for quadrotor simulators using Flightmare, focusing on generating stable, real-time velocity commands.
- Collaborated with a research team to analyze and optimize quadrotor performance, contributing to ongoing research in autonomous flight control and simulation.

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

- Integrated ROS (Robot Operating System) with visual SLAM (Simultaneous Localization and Mapping) to achieve real-time 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.
- Implemented object detection pipelines for dynamic interaction with virtual objects.
- Applied Unity's XR interaction toolkit to create intuitive user controls and interactions, ensuring seamless communication between the VR hardware and software.
- Participated in interdisciplinary research discussions and paper writing, focusing on the impact of immersive technologies on human-computer interaction and usability.
- Collaborated with teams on mixed reality projects that leveraged AI-driven environmental recognition to enhance object detection and manipulation in virtual and augmented spaces.

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

- Assisted in identifying and establishing a pipeline of clients for library translation services, while testing compatibility and stability of client integrations.
- Collaborated with professors and peers on a research paper.
- Modified and optimized XML configuration files for better modularity and compatibility across multiple Maven-based Java projects.
- Resolved complex Python packaging and dependency conflicts within Java runtime environments, enhancing cross-language integration.
- Gained hands-on software engineering experience including troubleshooting, code optimization, and environment setup.

School Of Computing Summer Workshop **Jul 2023**
Visiting Student *National University of Singapore*

- Developed a 2D game from scratch within a 3-week timeframe, collaborating with group members.
- Acquired proficiency in Unity and C# for 2D game development.

Skills

Programming: Python, C#, C, C++, SQL, Java, Matlab
Tools and Frameworks: ROS, Unity, Google Cloud Platform, Docker, Git
Machine Learning Libraries: PyTorch, TensorFlow
Engineering: Realsense, Altium, Keil, PCB design
Languages: English (proficient), French (beginner), Chinese (native)

Activities & Interests

Activities: Shanghai Marathon, Podcast Host, English Tutor
Interests: long distance running, reading, photography, writing, hiking