

Quanxiang Liu

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EDUCATION

- **Northwestern Polytechnical University** Bachelor
Bachelor of Software Engineering; GPA: 3.628/4.0, RANK: 21/299(first six semesters) September 2019 - June 2023
- **Northwestern Polytechnical University** Master
Master of Information and Communication Engineering; Credit Score: 90.91/100 September 2023 - Present

PROFESSIONAL EXPERIENCE

- **Logistics Drone** September 2020 - May 2022
UAV Challenge at the China Robotics Competition in 2020 and 2021
Main work: Deployed Open-VINS on a drone to enable indoor positioning; established Docker containers to reduce the workload of environment configuration; created a ROS program called "pose-remap" to convert poses calculated by Open-VINS into poses required by the drone.
- **Large-Scale Outdoor 3D Reconstruction and Novel View Generation** March 2023 - June 2023
Undergraduate Graduation Project
Main work: Studied and researched a series of methods for 3D reconstruction and novel view generation; implemented keyframe extraction for video sequences based on ORB-SLAM2; created two large-scale datasets captured on the Northwestern Polytechnical University campus; performed sparse and dense reconstruction on extracted keyframes using COLMAP; modified the rendering code of torch-ngp to enable novel view generation and video rendering around selected buildings.
- **RoboMaster University AI Challenge** September 2023 - November 2023
Intelligent Perception Technology Competition for Unmanned Aerial Vehicles
Main work: Managed project timeline and team assignments; built a physical platform for the drone; developed and tested algorithms on the official AirSim simulation platform, implementing drone control via cascade PID, a decision and planning module using task-stage partitioning and finite state machines, and high-speed robust stereo depth estimation based on Correlate-and-Excite (CoEx); packaged and deployed competition code using Docker; wrote technical reports and edited video presentations for the reports.
- **Teaching Assistant for CVlife Course Platform** December 2023 - November 2024
Courses on NeRF-based SLAM, 3D Gaussian Splatting-based SLAM, and implementing 3DGS SLAM
Main work: Assisted instructors in answering questions, creating and grading assignments, and improving course materials; familiar with codebases for NeRF-based SLAM, 3D Gaussian Splatting-based SLAM, NICE-SLAM, MonoGS, and others.
- **3DGS SLAM Algorithm Engineer (Remote Internship)** March 2024 - April 2024
Shanghai Silanbo Technology Co., Ltd.
Main work: Refactored existing 3DGS reconstruction code to adapt the current Taichi-Splatting framework into a SLAM model.

HONORS AND AWARDS

- Second Prize in 2023 Unmanned Aerial Vehicle Intelligent Perception Technology Competition Online Competition December, 2023
- Second prize in the 2021 China Robotics Competition Drone Challenge April, 2022
- Third Prize in Developer Testing, National University Software Testing Competition Finals November, 2021
- Guangdong-Hong Kong-Macao Scholarship of Northwestern Polytechnical University (rank 4.2%) September, 2021
- First Class Scholarship of Northwestern Polytechnic University (rank 4.2%) September, 2021
- First prize of the 22nd National Robotics Championship in the category of practical application of aerial flying robots December, 2020
- Third runner-up in the 2020 China Robotics Competition Drone Challenge November, 2020
- Second Class Scholarship of Northwestern Polytechnic University (rank 10.9%) September, 2020

SKILLS SUMMARY

- **Languages:** C/C++, Python, JAVA, MATLAB
- **Frameworks:** Pytorch, CUDA, ROS, OpenCV, Qt
- **Tools:** Cmake, Docker, GIT