Zhongyuan Liu

zliu051@e.ntu.edu.sg | 18513773755| linkedIn/linkedInUsername | github/myGithubName

EDUCATION

Master of Science in Electronics Singapore | Aug 2024 – Dec 2025 (Expected)
Nanyang Technological University, EEE School

Bachelor of Engineering in International College Beijing | Sep 2020 – July 2024
Beijing University of Posts and Telecommunications
Major in Telecommunications Engineering with Management | GPA: 81/100

WORK EXPERIENCE

BEIJING UINNOVA TECHNOLOGIES CO., LTD. | Digital Twin Development Intern Beijing | Jan 2021

- Developed digital twin applications with focus on front-end development and user interface design.

INTEL FPGA CHINA INNOVATION CENTER | Hardware Engineer Intern Chongqing | June – Sep 2023

- Focused on optimizing FPGA-based accelerator designs for deep convolutional neural networks (CNNs).

RESEARCH EXPERIENCE

DELTA-NTU CORPORATE LABORATORY | Research Assistant Singapore | Aug 2024 – Present

- Built the hardware and algorithm of the handhold motorized **LiDAR scanner** for 3D sensing and mapping applications.
- Designed the on-Site Fast LiDAR-Motor Calibration algorithm for improved system accuracy.
- Fused rotating LiDAR with a quad-fisheye panoramic camera and deployed the module on a **quadruped robot** for real-time SLAM-based mapping & navigation.

ADVANCED NETWORK TECHNOLOGY LAB | Research Assistant Beijing,BUPT | Mar – Sep 2023

- Engaged in research focusing on the development of commonly utilized perception algorithms for intelligent networked vehicles under supervision of Dr. Konglin Zhu.
- Conducted experiments involving the implementation of a **Transformer model** for Re-identification (ReID) applications using the **PyTorch library** to assess the efficacy of developed algorithms and models.

PROJECTS

Federated Feature Distillation Network (FFDN) Final Year Project | Oct 2023 – May 2024

- Built an **FFDN** that disentangles generalization vs robustness features, mitigating IoV-FL data heterogeneity.
- Combined Covariance Label Refine and MEC-RSU clustering for adaptive client selection, boosting efficiency.
- Added **differential privacy** to distilled features, cutting uplink traffic while preserving CIFAR-10 performance.

PUBLICATIONS

- **LiMo-Calib: On-Site Fast LiDAR-Motor Calibration for Quadruped Robot-Based Panoramic 3D Sensing System**
  Jianping Li*, **Zhongyuan Liu***, Xinhang Xu, Xiong Qin, Jinxin Liu, Shenghai Yuan, Fang Xu, Lihua Xie
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2025
  [Paper] [Code]

HONOURS AND AWARDS

- **Finalist** in China (Zhengzhou) International Intelligent Connected Vehicle Competition (CIICV) | June 2023
  Distinguished recognition in China's largest ICV competition, highlighting exceptional expertise and performance.

SKILLS

Programming Languages: C/C++,Python (including PyTorch,Pandas, and Numpy), MATLAB, Verilog
Tools: CUDA, NVIDIA Isaac Gym, FPGA, ROS
Design Tools: SolidWorks, Onshape