

LI, Yixuan

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EDUCATION

Zhejiang University, Hangzhou, China

Sep 2020–Present

Morningside Cultural China Scholar

Major: Electronic Engineering, **GPA:** 3.94/4.0

Coursework: Electromagnetic Fields & Waves (93/100), Fundamentals of Optoelectronics (96), Quantum Mechanics (95), RF Circuits and Systems (96), Numerical Analysis (95)

RESEARCH EXPERIENCE

Tunable Nonlinear Edge Detection | Photonics

Jun 2022–Nov 2022

- Proposed a multilayer structured thin film based on metallic quantum wells that perform edge detection. The effect varies accordingly by tuning the pump light intensity.

LiDAR-based Localization | Robotics

Open-source at [zjuluolun/BEVPlace](#), ★99

Jul 2022–Dec 2022

- Proposed a rotation-invariant network BEVPlace for LiDAR-based localization problems in autonomous driving. Developed a position estimation method by mapping the feature distance to the geometric space.
- Outperforms the state-of-the-art methods, is robust to view variation, and generalizes well to previously unseen environments. It benefits various applications, including loop closure detection, global localization, and SLAM.

Image-to-point cloud Cross-modal Localization | Robotics

Dec 2022–Feb 2023

- The motivation is to combine the strengths of LiDAR and cameras, the two types of sensors widely used in localization. Proposed a method to get the location of an image within a large-scale point cloud map. Employ bird's-eye view representation to boost the performance in cross-modal localization.
- Oral presentation and poster session presentation at IROS 2023 conference in Detroit, U.S.

Portable EMG System for Remote Exercise Guidance and Gesture Recognition | EE

Feb 2023–Jun 2023

- Designed the EMG signal front-end hardware circuit, employed neural networks for signal analysis, and integrated the system with an Android app for real-time information display. Utilized for home-based exercise guidance and posture correction during the pandemic; gesture recognition with associated applications.

PUBLICATIONS

- Y. Li**, S. Zheng, Z. Yu, B. Yu, S.-Y. Cao, L. Luo, and H.-L. Shen, “I2p-rec: Recognizing images on large-scale point cloud maps through bird's eye view projections,” Accepted to **IROS'23** [PDF]
- L. Luo, S. Zheng, Y. Li, Y. Fa, B. Yu, S. Cao, and H. Shen, “Bevplace: Learning lidar-based place recognition using bird's eye view images,” Accepted to ICCV'23 [PDF]

HONORS AND AWARDS

National Scholarship (Top 0.2% nation-wide) (2 Times)

Dec 2021 & Dec 2022

Zhejiang University Scholarship – First Prize (Top 3%) (2 Times)

Dec 2021 & Dec 2022

Second place, ICRA 2022 General Place Recognition Competition (Co-hosted by Carnegie Mellon University)

Oct 2022

PERSONAL EXPERIENCES

Co-organizer, Academic Visit to the U.S. of Morningside Scholars

Aug–Sep 2023

Volunteer at Electrical Volunteer Association in Zhejiang University, offering free computer repair services for all school faculty and students

Oct 2020–Present

Second Place, Zhejiang University badminton competition women's single

May 2022

SKILLS

Tools: \LaTeX , Linux shell, PyTorch, OpenCV, COMSOL Multiphysics

Programming Languages: Python, MATLAB, C, Java, Verilog