LI, Yixuan

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Education

Zhejiang University — Sep 2020 – present
Major: Electronic Engineering
GPA: 3.92/4.0 (88.89/100) RANKING: 1/94

Research Experience

LiDAR-based Place Recognition Using Bird's-eye View Projections — Jul 2022 – Dec 2022
Co-Principal Investigator

- Proposed a method for LiDAR-based place recognition using bird's-eye view (BEV) images, achieving the state-of-the-art performance. We used group convolution to extract rotation-equivariant local features from the images and NetVLAD for global feature aggregation.

Image-to-point cloud Cross-modal Place Recognition — Dec 2022 – Feb 2023
Co-Principal Investigator

- We gave an initial attempt to solve the image-to-point cloud place recognition task, by converting both the images and the point clouds to BEV images. Then on these BEV images, we conduct feature extraction and matching.

Tunable Nonlinear Edge Detection — Jun 2022 – Nov 2022
Principal Investigator

- Proposed a simple structure of a metamaterial thin film that can perform edge detection, whose effect can be changed by varying light intensity. By constructing metal quantum wells, the reflection rate of the film varies according to different incident angles.

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," arXiv preprint arXiv:2303.01043, 2023. (Submitted to IROS, International Conference on Intelligent Robots and Systems 2023)
- 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," arXiv preprint arXiv:2302.14325, 2023. (Submitted to ICCV, International Conference on Computer Vision 2023)

Honors and Awards

National Scholarship — Dec 2021
National Scholarship — Dec 2022
Second place of ICRA 2022 General Place Recognition Competition — Oct 2022
Second place in the women's singles category at the school-level badminton competition — May 2022

Skills

Tools: Latex, Linux shell, PyTorch
Programming Languages: Python, C, Java, MATLAB, etc.