Jiaze Li

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Education

University College Dublin, Dublin, Ireland — Sept. 2022 – Present
B.E. in Electronic Information Engineering; Present Cumulative GPA: 3.37/4.2

Beijing University of Technology, Beijing, China — Sept. 2022 – Present
B.E. in Electronic Information Engineering; Present Cumulative GPA: 3.33/4.2

Selected High-Scoring Coursework: Maths (A+); Data Structures and Algorithms (A); Signals and Systems (A).

Work Experience

Research Assistant — Oct. 2024 – Present
College of Computer Science, Beijing University of Technology, Beijing, China
Supervisor: Assoc. Prof. Yongjian Deng

Participated in a project aimed at addressing complex inter-frame motion in video frame interpolation (VFI) through event-guided approaches.

- Proposed a novel framework combining event data and Stable Diffusion, with an event-aware denoising strategy and a customized perceptual loss to improve temporal consistency and reconstruction quality under complex motion.

Research Assistant — Oct. 2023 – Present
Department of Building Environment and Energy Engineering, The Hong Kong Polytechnic University, Hong Kong
Supervisor: Asst. Prof. Zhiling Guo

Participated in a project conducting research in computer vision and generative AI for energy engineering applications.

- Leveraged diffusion models and multimodal data to super-resolve meteorological inputs for more accurate photovoltaic (PV) potential estimation.
- Utilized generative models to synthesize remote sensing data and PV masks for training PV panel detection networks, reducing annotation cost.
- Improved SAM (Segment Anything Model) for enhanced segmentation accuracy of PV panels in aerial imagery.

Research Assistant — Sept. 2023 – Jun. 2024
School of Information Science and Technology, Beijing University of Technology, Beijing, China
Supervisor: Prof. Liguo Zhang

Participated in a project developing intelligent visual systems for enhanced transportation safety and human sensing contexts.

- Developed a generative data augmentation pipeline based on Stable Diffusion to synthesize rare small-scale intrusions, enabling enhanced training of an improved YOLO-based detection model for foreign object recognition.
- Built a real-time 3D human pose reconstruction system by integrating YOLOv8 with depth camera inputs.

Publication

Enhancing Multimodal Meteorological Data Resolution via Diffusion Model for Accurate PV Potential Estimation.
Jiaze Li, Zhiling Guo*, Huan Zhao, Hongjun Tan, Qing Yu, Rui Zhang, Jian Xu, Jinyue Yan
International Conference on Applied Energy (Oral Presentation), 2024 [Paper]

Generative Approach for Detecting Small Intrusive Foreign Objects in High-Speed Railway Scenario.
Quan Hao, Rui Shi, **Jiaze Li**, Liguo Zhang*
IEEE Transactions on Intelligent Transportation Systems (Q1, IF: 7.9), Revision Under Review

Synthesizing Images with Aligned Masks Using Text-to-Image Based Generative AI for Robust PV Segmentation.
Hongjun Tan, Zhiling Guo*, **Jiaze Li**, Yuntian Chen, Qi Chen, Haoran Zhang, Jinyue Yan*
Renewable Energy (Q1, IF: 9.0), Revision Under Review

Real-Time 3D Human Pose Reconstruction Based on Depth Camera and YOLOv8 Model.
Heng Deng, **Jiaze Li**, Quan Hao, Zhaoyang Cheng, Rui Shi, Liguo Zhang
CN Patent

A High-Precision Method for Photovoltaic Panel Segmentation Combining Large-Scale Model Prior Knowledge and Multimodal Information.
Lingchengjia Zhou, Kechuan Dong, Hongjun Tan, **Jiaze Li**, Qing Yu, Zhiling Guo*, Jinyue Yan
Applied Energy Symposium and Forum: Low-Carbon Cities and Urban Energy Systems (Oral Presentation), 2024 [Paper]

* Corresponding author

Academic Service

- Reviewer for *IEEE Transactions on Intelligent Transportation Systems* 2025

Selected Awards

- **Outstanding Student Program**, Beijing University of Technology, 2025
- **Innovation and Entrepreneurship Award**, Beijing University of Technology, 2024
- **Second Prize**, China College Students' "Internet+" Innovation and Entrepreneurship Competition, 2024
- **Academic Excellence Award**, Beijing-Dublin International College, 2022, 2023

Technical Skills

- **Languages:** Chinese (native), English (TOEFL 85/120), Japanese (JLPT N2)
- **Programming:** Python, C, Java
- **Tools and Platforms:** Git, Linux
- **Deep Learning Frameworks:** PyTorch
- **Document Preparation:** LaTeX