ZHENXIANG LIN

github.com/zhenxianglin zhenxianglin.github.io zhenxianglin@icloud.com

PERSONAL PROFILE

I received my master's degree in Information Technology from University of New South Wales and bachelor's degree in Electrical Engineering and Automation from Shanghai University of Electric Power. My research interests are in the area of **machine and deep learning**, **computer vision**, **robotics** and related AI applications. Particularly, I have experience on long-tailed image recognition and 3D vision grounding.

EDUCATION

University of New South Wales Sydney, Australia
Master of Information Technology — Artificial Intelligence Sep. 2019 - Dec. 2021
Selected Coursework: Computer Vision (89/100), Neural Networks and Deep Learning (92/100), Research Project (89/100)

Shanghai University of Electric Power Shanghai, China
Bachelor of Engineering — Electrical Engineering and Automation Sep. 2012 - Jun. 2016

PUBLICATIONS & PRE-PRINT

• Zhenxiang Lin, Xidong Peng, Peishan Cong, Yuenan Hou, Xinge Zhu, Sibei Yang, Yuexin Ma. "**WildRefer: 3D Object Localization in Large-scale Dynamic Scenes with Multi-modal Visual Data and Natural Language.**" (ICCV 2023, under review) [arxiv 2023]

RESEARCH EXPERIENCE

3D Vision Grounding on Large-Scale Scenes *Dec. 2021 - Mar. 2023*
ShanghaiTech University *Supervisor: Yuexin Ma*
• Proposed a new task: 3D vision grounding in large-scale dynamic scenes.
• Collected two 3D Vision Grounding datasets on large-scale dynamic scenes.
• Presented a novel method that fully extracts the dynamic feature in images and point clouds to match semantic features in language.
• Compared our method with other methods and achieved the state-of-the-art performance.

Multi-Label Long-Tailed Distribution Image Classification *Jun. 2021 - Dec. 2021*
University of New South Wales *Supervisor: Yang Song*
Master of IT Research Project, Grade: HD
• Analysed the difference of single-label and multi-label long-tailed distribution.
• Compared the effectiveness of resampling and reweighting strategy.
• Evaluated the effect of different feature extractor on the long-tail distribution datasets.
• Integrated the state-of-the-art methods to achieved a higher performance on two multi-label long-tailed datasets VOC-MLT and COCO-MLT.
• Summarized advantages and disadvantages of different methods.

PROJECT EXPERIENCE

Data Mining Project *Apr. 2021*
• Used SVR to predict COVID-19 confirmed cases.
• Tested different feature engineering approaches and evaluated their the effects.

Computer Vision Project *Oct. 2020 - Dec. 2020*
• Conducted a literature review about classic methods and deep learning methods on plants image process.

• Implemented both traditional and deep learning methods including HOG and UNet to perform detection and segmentation.
• Tuned the different parameters to analyse their effects.

Neural Network Project *Oct. 2020 - Nov. 2020*
• Designed both MLP and CNN frameworks for handwritten Hiragana symbols classification.
• Used LSTM and GRU to read business reviews in text format and predict their rating and business category.
• Analysed the effects of different structures.

WORK EXPERIENCE

Research Assistant, ShanghaiTech University, 4DV Lab *Dec. 2021 - Mar. 2023*
• Collected and cleaned dataset.
• Designed and implemented experiments.
• Analyzed effectiveness of methods by quantitative metrics and visualization.
• Designed a front and back-end separated data annotation system.

Maintenance Engineer, State Grid Shanghai Municipal Electric Power Company *Sep. 2016 - Mar. 2019*
• Operated and maintained substation transformer as well as its associated equipments.
• Managed new substation establishment project.

SKILLS

Programming Language:	Python, C/C++, Java, JavaScript, Matlab
Deep Learning Framework:	PyTorch, TensorFlow2.0
Development Framework:	React, Django, Flask
Database:	PostgreSQL, MySQL, MongoDB
Libraries:	OpenCV, MMCV, NumPy, scikit-learn, pandas, NLTK, etc.
Others:	git, Linux, conda, etc.

ACTIVITIES

Jane Street Market Prediction (Kaggle) *Nov. 2020 - Feb. 2021*
• Implemented a MLP model by TensorFlow 2.0 to predict stock data in order to maximize profits. (Top 16%)

AWARDS & SCHOLARSHIPS

• **Award with Excellence**, *University of New South Wales* 2021
• **The third prize of excellent student's scholarship**, *Shanghai University of Electric Power* 2012-2014