Zujin GUO

Phone: +65 88248770 | **Email**: zujin.guo@ntu.edu.sg

EDUCATION

Xi'an Jiaotong University | Xi'an, China Sept 2016 – June 2020

Bachelor of Engineering in Automation | **Overall GPA:** 83.81/100

- **Relevant Coursework:** Analog Circuits (96/100), Advanced Mathematics (88/100), Theories of Probability and Statistics (88/100), Data structure, C language, Linear Algebra, Signals and Systems

Nanyang Technological University | Singapore Aug 2021 – Jan. 2023

Master of Science in Artificial Intelligence | **Overall GPA:** 4.40/5.00

- **AI Master Project:** Learning Transferable Audio-Visual Models with Self-Supervised Learning
  Advised by Prof. Chen Change Loy and Dr. Wei Li
  - Focusing on sound localization, built a codebase for important methods.
  - Cross-modality(audio-visual) generation and representation learning exploration.

WORK EXPERIENCES

Nanyang Technological University | Singapore Mar 2023 – Present

MMLab@NTU | Research Engineer

- Video frame interpolation

MEGVII | Beijing, China

MEGVII Research | CV Research Intern Mar 2021 – June 2021

- Investigated the background and methods of Self-supervised Learning in Action Recognition.
- Designed a simple but novel pretext task that achieves good performance on downstream tasks.

Apon Medical Technology | Shanghai, China

R&D Centre | Algorithm Engineer Intern Feb 2020 – Jan 2021

- Abnormal value detection, apnea detection, pain level classification from facial expressions

RESEARCH PROJECTS

Relate Anything | Research Engineer | NTU-Slab April 2023

Working with Bo Li, Jingkang Yang and Zijian Zhou

- We build the first Relate Anything Model(RAM) which can predict the relations of any object pairs.
- More than 300 stars within 3 weeks on github!

Panoptic Scene Graph | Student Research Assistant | NTU-Slab Nov. 2021 – March 2022

Working with Jingkang Yang and Yizhe Ang

- Established a PSG datasets and two baseline model to solve PSG problem.
- Built and maintain a new codebase OpenPSG based on MMdet2.
- Organized PSG Challenge competition.
- This work accepted by ECCV2022.
- We extended this task from image-level to video-level as the PVSG task with a well-annotated dataset in CVPR2023.
- We also have proposed a new method of insights for solving the PSG problem which has been submitted for ICCV2023.

Self-supervised video action recognition| CV Research Intern | MEGVII March 2021 – June 2021

Advisor: Dr. Pengkun Zheng

- Investigate methods of self-supervised learning, including MoCo, SimCLR, BYOL etc.
- Exploring potential supervisions as pretrained tasks to make the learning process easy and fast.
- Designed video acceleration as pretrain task, receiving better performance simply by acceleration prediction.

Measured Similarity of Dataset in Statistics | Student Research Assistant | UTT Aug 2019 – Dec 2019

Advisor: Professor Régis Lengelle, Institut Charles Delaunay, Université de Technologie de Troyes

- Explored multiple approaches to calculate the similarity of datasets, such as Euclidean distance, Cosine distance, etc.
- Designed a non-parametric method to measure the similarity based on the errors of well-trained classifiers.
- Took the test power of the error distribution as the final criterion for the dataset-level similarity.

PUBLICATION

1. Jingkang Yang, Yi Zhe Ang, **Zujin Guo**, Kaiyang Zhou, Wayne Zhang and Ziwei Liu. Panoptic Scene Graph Generation. In *European conference on computer vision* (ECCV). Springer, 2022. pdf
2. Jingkang Yang, Wenxuan Peng, Xiangtai Li, **Zujin Guo**, Liangyu Chen, Bo Li, Zheng Ma, Wayne Zhang, Kaiyang Zhou, Chen Change Loy, Ziwei Liu. Panoptic Video Scene Graph Generation. In *Computer Vision and Pattern Recognition* (CVPR), 2023.
3. Jinghao Wang, Zhengyu Wen, Xiangtai Li, Jingkang Yang, **Zujin Guo**, Ziwei Liu. Pair then Relation: Pair-Net for Panoptic Scene Graph Generation. (Submitted for ICCV2023)

SKILLS

Computer: Python (pytorch, tensorflow-keras), Java, MATLAB

Language: Mandarin Chinese (Native), English (Fluent, IELTS 7), French (Conversational)