Zujin GUO

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EDUCATION

Nanyang Technological University Aug 2021 – Jan. 2023
Master of Science in Artificial Intelligence; GPA**:** 4.40/5.00

Xi'an Jiaotong University Sept 2016 – June 2020
Bachelor of Engineering in Automation; GPA**:** 83.81/100

WORK EXPERIENCES

MMLab@NTU, Nanyang Technological University Mar 2023 – Present
Research Engineer Singapore

- Tackle the video frame interpolation task from the perspective of motion modeling.
- Visual representation learning in VLM.

MEGVII Mar 2021 – June 2021
Research Intern Beijing, China

- 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 Feb 2020 – Jan. 2021
Algorithm Engineer Intern Shanghai, China

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

RESEARCH PROJECTS

Video Frame interpolation | MMLab@NTU April 2023 – Feb. 2024
Advised by Dr. Wei Li, Prof. Chen Change Loy.

- We propose a novel motion modeling method for the video frame interpolation task.
- The model achieves state-of-the-art performance across interpolation benchmarks.
- The paper is currently under review.

Relate Anything | MMLab@NTU 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.

Panoptic Scene Graph | MMLab@NTU 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, named as Pair-Net, for solving the PSG problem.

Self-supervised video action recognition | MEGVII March 2021 – June 2021
Advised by 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 | UTT Aug 2019 – Dec 2019
Advised by Prof. Régis Lengelle.

- 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 of datasets 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. **Zujin Guo**, Wei Li, Chen Change Loy. Generalizable Implicit Motion Modeling for Video Frame Interpolation. *Under review*, 2024.
2. 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), 2022.
3. 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.
4. Jinghao Wang, Zhengyu Wen, Xiangtai Li, **Zujin Guo**, Jingkang Yang, Ziwei Liu. Pair then Relation: Pair-Net for Panoptic Scene Graph Generation. Arxiv.

SKILLS

Programming: Python (pytorch), Java, MATLAB, C
Language: Mandarin Chinese (Native), English (Fluent, IELTS 7), French (Conversational)