Zujin GUO

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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 – Nov. 2022

Master of Science in Artificial Intelligence | **Overall GPA:** 4.33/5.00

- **AI Master Project (Ongoing):** Learning Transferable Audio-Visual Models with Self-Supervised Learning
  Advised by Prof. Chen Change Loy and Dr. Wei Li
  - Focusing on sound localization, built codebase for methods with or without codes
  - Exploring cross-modality(audio-visual) generation and understanding

RESEARCH PROJECTS

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
- Helped organized PSG Challenge competition
- This work accepted by ECCV2022

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

Advisor: Dr. Pengkun Zheng

- Investigate papers of self-supervised contrastive learning, including MoCo, SimCLR, BYOL and etc.
- Focusing on video representation learning, implemented CoCLR
- Investigating potential supervisions as pretrained tasks to make the learning process easy and fast
- Designed video acceleration as pretrain task, receiving better performance than previous work simply by speed 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, Minkowski distance, etc.
- Sampled and classified data from two datasets to design a new method for measuring the similarities between datasets.
- Statistically examined the number of classified errors, which followed a binominal distribution law according to the pattern recognition theory.
- Trained and tested SVM on different pairs of sampled data, calculated and compared the number of errors, eventually received the test power as a criterion of the method.
- Described the new measured technology as a useful tool metrics in certain cases of transfer learning.

WORK EXPERIENCES

MEGVII | Beijing, China

MEGVII Research | CV Research Intern Mar 2021 – June 2021

- Investigated the background and methods of Self-supervised Learning in Action Recognition
- Reproduced results in paper and carried out experiments
- Read, concluded and presented papers and ideas
- Worked on new ideas for self-supervised learning

Apon Medical Technology | Shanghai, China

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

- Detected abnormal values among numerical data and consolidated comprehension of ML and statistics.
- Analyzed audio record to detect apnea, helped to separate snoring parts with GMM, and made contributions to the full algorithm in practice.
- Recognized individuals' pain level through images, resolved the problem of dataset classes' imbalance, and improved the architecture of deep learning models.
- Reviewed relevant literature to further develop ideas and interests.

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