Yusen Wu

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Education

Sichuan University (SCU), Chengdu, China — Sep. 2021 – Jun. 2025

Undergraduate in Computer Science and Technology (Top-notch program)
GPA: 3.93/4.00, **Average Score**: 92.60/100

Research Experience

Layer-wised Sparsification Based on Hypernetwork for Distributed NN Training — Oct. 2023 – Mar. 2024

Team Lead Supervisor: Qing Ye (Sichuan University)

- Proposed a layer-wised sparsification method which utilizes hypernetworks to narrow down the communication volume.
- Constructed an efficient objective function for the hypernetwork to guide the selection of layers for transmission, ensuring that layers which contribute more to the learning process are prioritized to transmit.
- Conducted extensive experiments on different models and datasets. The results validate the efficacy of our method and demonstrate its compatibility with other current compression techniques (e.g., TernGrad, Top-K).

outcome: (1st author) A research paper in submission.

Masked Unmasked Face Recognition — Jul. 2023

Team Lead Supervisor: Terence Sim (National University of Singapore)

This is a summer workshop in NUS SoC.

- Developed face mask recognition algorithms, using dlib for facial detection, landmark-based mask simulation, and HOG for feature extraction. Employed SVM for training and testing, achieving accurate mask identification in small datasets.
- Applied ECCV principles for face alignment, utilized features like HoG, Sobel, and PCA, and employed k-nearest neighbors for effective employee classification.
- Utilized HoG, Sobel, and Histogram Distance as initial features, employed bagging for enhanced accuracy, and implemented High-dim LBP.

Saliency Detection for RGB-D Images Based on Swin Transformer — Oct. 2022 – Jun. 2023

Participant Supervisor: Shiyong Lan (Sichuan University)

- Self-learned Python and foundational knowledge in deep learning, as well as neural network architectures.
- Coded classic neural network structures, replicating experiments to enhance proficiency.

Honors and Awards

National Scholarship in Sichuan University	2021 – 2022
Merit Student in Sichuan University	2021 – 2022, 2022 – 2023
First Prize, Lanqiao Cup - Provincial (Sichuan) in C/C++ Programming	2022, 2023
Third Prize, Lanqiao Cup - National Final in C/C++ Programming	2022, 2023
Third Prize, Group Programming Ladder Tournament - National Final	2023
First Prize, China Undergraduate Mathematical Contest in Modelling (Sichuan)	2023

Skills

- Programming Languages: Python, C/C++, MATLAB, LaTeX