

Yusen Wu

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📖 Education

Sichuan University (SCU), Chengdu, China

Sep. 2021 – Jun. 2025

B.E. in Computer Science and Technology (Top-notch program)

• **GPA:** 3.93/4 **Average Score:** 92.80/100 **Rank:** 4/357 **TOEFL:** 100

📖 Research Experience

Multi-tenant GPU Offloading

Apr. 2024 – Now

Team Member Supervisor: Yue Cheng (University of Virginia) & Dong Li (University of California, Merced)

- Investigated zero-offload tasks in multi-tenant GPU scenarios, focusing on performance degradation due to PCIe contention when host memory is sufficient.
- Analyzed further performance degradation caused by SSD contention when host memory is insufficient, necessitating offloading to NVMe storage.
- Explored potential issues of resource underutilization in multi-tenant environments

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 using hypernetworks to reduce 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.

📖 Project Experience

Masked Unmasked Face Recognition

Jul. 2023

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

- 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.

📖 Publication

- **Yusen Wu**, Jiaxun Li & Qing Ye. Layer-wised Sparsification Based on Hypernetwork for Distributed NN Training. ICANN2024 doi.org/10.1007/978-3-031-72347-6_13

📖 Honors and Awards

National Scholarship in Sichuan University

2021 – 2022

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

The First Prize Scholarship in Sichuan University

2023 – 2024

Merit Student in Sichuan University

2021 – 2022, 2022 – 2023, 2023 – 2024

📖 Skills

- Programming Languages: Python, C/C++, MATLAB, \LaTeX , CUDA
- Deep Learning Framework: Pytorch, DeepSpeed, Megatron
- Languages: Chinese (native), English (advanced)