Shang Yang

shangy@mit.edu · ys-2020 · in Shang Yang · ys-2020.github.io

Education

Massachusetts Institute of Technology (MIT) Sep. 2023 - Present
Ph.D. Student in EECS Department, advised by Prof. Song Han Cambridge, MA

Tsinghua University Aug. 2019 - Jul. 2023
Bachelor of Engineering in Electronic Information Science and Technology Beijing, China

- Overall GPA: 3.99 / 4.0 Rank: 1 / 256

Selected Publications Google Scholar

[1] Ji Lin*, Jiaming Tang*, Haotian Tang†, **Shang Yang**†, Wei-Ming Chen, Wei-Chen Wang, Guangxuan Xiao, Xingyu Dang, Chuang Gan, Song Han. ***AWQ: Activation-aware Weight Quantization for LLM Compression and Acceleration.*** (*Algorithm co-lead, †System co-lead. The first four authors have equal contributions.) (**MLSys 2024 Best Paper Award**)

[2] Yujun Lin*, Haotian Tang*, **Shang Yang***, Zhekai Zhang, Guangxuan Xiao, Chuang Gan, Song Han ***QServe: W4A8KV4 Quantization and System Co-design for Efficient LLM Serving.*** (* indicates equal contribution) **(MLSys 2025)**

[3] **Shang Yang***, Junxian Guo*, Haotian Tang, Qinghao Hu, Guangxuan Xiao, Jiaming Tang, Yujun Lin, Zhijian Liu, Yao Lu, Song Han. ***LServe: Efficient Long-sequence LLM Serving with Unified Sparse Attention.*** **(MLSys 2025)**

[4] Haotian Tang*, **Shang Yang***, Zhijian Liu, Ke Hong, Zhongming Yu, Xiuyu Li, Guohao Dai, Yu Wang, Song Han. ***TorchSparse++: Efficient Training and Inference Framework for Sparse Convolution on GPUs.*** **(MICRO 2023)**

[5] Haotian Tang*, Yecheng Wu*, **Shang Yang**, Enze Xie, Junsong Chen, Junyu Chen, Zhuoyang Zhang, Han Cai, Yao Lu, Song Han. ***HART: Efficient Visual Generation with Hybrid Autoregressive Transformer.*** (**ICLR 2025)**

[6] Junyu Chen*, Han Cai*, Junsong Chen, Enze Xie, **Shang Yang**, Haotian Tang, Muyang Li, Yao Lu, Song Han. ***Deep Compression Autoencoder for Efficient High-Resolution Diffusion Models.*** **(ICLR 2025)**

[7] Guangxuan Xiao, Jiaming Tang, Jingwei Zuo, Junxian Guo, **Shang Yang**, Haotian Tang, Yao Fu, Song Han. ***DuoAttention: Efficient Long-Context LLM Inference with Retrieval and Streaming Heads.*** **(ICLR 2025)**

[8] Zhijian Liu*, Ligeng Zhu*, Baifeng Shi, Zhuoyang Zhang, Yuming Lou, **Shang Yang**, Haocheng Xi, Shiyi Cao, Yuxian Gu, Dacheng Li, Xiuyu Li, Yunhao Fang, Yukang Chen, Cheng-Yu Hsieh, De-An Huang, An-Chieh Cheng, Vishwesh Nath, Jinyi Hu, Sifei Liu, Ranjay Krishna, Daguang Xu, Xiaolong Wang, Pavlo Molchanov, Jan Kautz, Hongxu Yin, Song Han, Yao Lu. ***NVILA: Efficient Frontier Visual Language Models.*** **(CVPR 2025)**

[9] Yukang Chen*, Fuzhao Xue*, Dacheng Li†, Qinghao Hu†, Ligeng Zhu, Xiuyu Li, Yunhao Fang, Haotian Tang, **Shang Yang**, Zhijian Liu, Ethan He, Hongxu Yin, Pavlo Molchanov, Jan Kautz, Linxi Fan, Yuke Zhu, Yao Lu, Song Han. ***LongVILA: Scaling Long-Context Visual Language Models for Long Videos.*** **(ICLR 2025)** (*Algorithm co-lead, †System co-lead. The first four authors have equal contributions.)

[10] Zhijian Liu*, Zhuoyang Zhang*, Samir Khaki, **Shang Yang**, Haotian Tang, Chenfeng Xu, Kurt Keutzer, Song Han. ***Sparse Refinement for Efficient High-resolution Semantic Segmentation.*** **(ECCV 2024)**

[11] Zhijian Liu*, Xinyu Yang*, Haotian Tang, **Shang Yang**, Song Han. ***Flatformer: Flattened Window Attention for Efficient Point Cloud Transformer.*** **(CVPR 2023)**

Experiences

NVIDIA *Research Intern* Work with Prof. Song Han Jun. 2024 - Jan. 2025
Topic: Efficient Systems for Large Language Models and Foundation Models Cambridge, MA

MIT *Research Assistant* Advised by Prof. Song Han Jul. 2022 - Aug. 2023
Topic: Efficient Machine Learning Systems for 3D Point Clouds Cambridge, MA

Projects

NVlabs/VILA (3.0K Stars)
A Family of State-of-the-Art Vision Language Models (VLMs) for Diverse Multimodal AI Tasks.

mit-han-lab/llm-awq (2.8K Stars)
Effective Low-bit Weight Quantization Algorithm for LLMs with Efficient System Support.

mit-han-lab/torchsparse (1.3K Stars)
High-performance Neural Network Library for Point Cloud Processing.

mit-han-lab/omniserve
Efficient and Accurate LLM Serving System on GPUs with W4A8KV4 Quantization and Unified Sparse Attention.

Teaching

Teaching Assistant for TinyML Course (MIT 6.5940) Sep. 2024 - Dec. 2024