

Yunqian Fan

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Education

- 2018 – 2022  **B.E., Beihang University, Beijing, China** Major: Integrated Circuits.
Major GPA: 3.8/4.0 (1/19 of the class)
Thesis title: *Quantization Towards CIM (compute-in-memory) Architecture*. Supervisor: Prof. Wang Kang, Outstanding Thesis Award of Beijing
- 2022 – 2025  **M.Sc., ShanghaiTech University, Shanghai, China** Major: Computer Science
Major GPA: 3.9/4.0
Research focus: Compression and Acceleration. Supervisor: Prof. Rui Fan

Research Publications

Conference Proceedings

- 1 **Y. Fan**, X. Wei, R. Gong, Y. Ma, X. Zhang, Q. Zhang, and X. Liu, “Selective focus: Investigating semantics sensitivity in post-training quantization for lane detection,” in *The 38th Annual AAAI Conference on Artificial Intelligence, AAAI*, 2024.
- 2 J. Bai, **Y. Fan**, S. Sun, W. Kang, and W. Zhao, “Tiny neural network search and implementation for embedded fpga: A software-hardware co-design approach,” in *2021 IEEE Asian Solid-State Circuits Conference (A-SSCC)*, IEEE, 2021, pp. 1–3.
- 3 H. Zhang, J. Liu, W. Kang, **Y. Fan**, S. Fu, J. Bai, B. Pan, Y. Liu, and W. Zhao, “A 40nm 33.6 tops/w 8t-sram computing-in-memory macro with dac-less spike-pulse-truncation input and adc-less charge-reservoir-integrate-counter output,” in *2021 IEEE International Conference on Integrated Circuits, Technologies and Applications (ICTA)*, IEEE, 2021, pp. 123–124.



Journal Articles

- 1 J. Bai, W. Xue, **Y. Fan**, S. Sun, and W. Kang, “Partial sum quantization for computing-in-memory based neural network accelerator,” *IEEE Transactions on Circuits and Systems II: Express Briefs*, 2023.


Copyrighted Patents

- 1 **Y. Fan**, C. Liu, J. Xu, H. Zhang, W. Kang, and B. Pan, *Automatic adaptation method and device for neural networks*, Patent of China. Application Number: 202110399619.4 Patent Number: 202208300209750, 2022.
- 2 **Y. Fan**, C. Liu, J. Xu, H. Zhang, W. Kang, and B. Pan, *General parallel inference acceleration structure and inference accelerator design for ai*, Patent of China. Application Number: 202110399639.1 Patent Number: 2022071902253770, 2022.


Skills

- Hardware Programming  Verilog HDL, Xilinx HLS C++, FPGA
- Software Programming  C, C++, Python, RUST, MATLAB

Skills (continued)













Research Topic  Hardware Acceleration (FPGA, GPU), Post Training Compression(Quantization, Sparisification), LLM System

Internship History

- 2021 – 2024  **Algorithm Research Intern.** SenseTime Research, Beijing, China.
1. Maintainer of [MQBench](#), a quantization toolkit for DNN deployment on hardware through computation graphs.
 2. Lead author on an AAAI 2024 [paper](#): introducing a semantics-driven quantization method for detection models.
 3. Focusing on LLMs acceleration through strategic scheduling and GPU kernel enhancements. ([lightllm](#)).

Miscellaneous Experience

Awards and Achievements

- 2024  **Rank 2/39** AICAS Grand challenge 2024 Preliminary Stage, IEEE CIRCUITS AND SYSTEMS SOCIETY
- 2022  **Future Star Award** SenseTime Ltd., *Best Intern Award*
- 2022  **ShenYuan Award Honorary Nominee** Beihang University, *Top 20 / 4000 Senior students in Beihang University By Comprehensive Evaluation.*
- 2022  **Outstanding Bachelor Thesis of Beihang University**, Beihang University
- 2022  **Outstanding Bachelor Thesis of Beijing**, Beijing Municipal Commission of Education
- 2022  **SenseTime Scholarship**, SenseTime Ltd. *30 undergraduates were selected from 100 candidates around Mainland China for their contributions to the research of Artificial Intelligence.*
- 2021  **Meritorious** Mathematical Contest in Modeling, Consortium for Mathematics and Its Applications (COMAP)
- 2021  **First Level Award** Beijing Integrated Chip Design Competition For College Students, Beijing Municipal Commission of Education
- 2021  **Enterprise Special Award and Second Prize** National IC EDA Elite Challenge Of China, Chinese Institute of Electronics
- 2019-2022  **First Class Scholarships**, Beihang University, *for outstanding achievements in community work, academics, and science and technology competitions*
- 2019  **Academic Excellence Award for Undergraduate** Beihang University, *Top 3 in the School of Information Science (900 students)* Beihang University
- 2019  **First Level Award** Beijing Mathematics Competition For College Students, Beijing Mathematical Society