

Yuchen Fan

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About Me

I am Yuchen Fan, a first-year Ph.D. student at the Department of Electronic Engineering, Tsinghua University, advised by Prof. Shuwen Deng.

Research Interests

My research interests lie in **computer architecture**. Previously, I have worked on the **hardware security** challenges.

Education

Ph.D.	Tsinghua University , Electronic Science and Technology	Beijing, China Aug 2026 – present
B.S.	Tsinghua University , Electronic Science and Technology	Beijing, China Sept 2022 – June 2026
	- Gpa: 3.9 / 4.0; earned A+ in 52 out of 152 GPA-related credits - Rank: 3rd out of 267 students (1%)	

Honors and Awards

Tsinghua Outstanding Graduate (<4%)	June 2026
Tsinghua Outstanding Undergraduate Thesis	June 2026
China National Scholarship (2024-2025)	Dec 2025
China National Scholarship (2023-2024)	Dec 2024
The Comprehensive Excellence Scholarship of Tsinghua University (2024-2025)	Dec 2025
The Comprehensive Excellence Scholarship of Tsinghua University (2023-2024)	Dec 2024
The Comprehensive Excellence Scholarship of Tsinghua University (2022-2023)	Dec 2023
Second Prize, NSCSCC'26 (Loongson Cup)	Aug 2026
Third Prize, NSCSCC'24 (Loongson Cup)	Aug 2024

Publications

TArCS: Trusted and Attack-Resilient Clock Source with TEE and RDMA Yunpeng Xu, Yuchen Fan , Yu Jin, Shuangjie Yao, Jia Zhang, Teng Ma, Shuwen Deng (APPT'26)	July 2026
SSBench: Automated Characterization of Memory Dependence Predictors on Modern CPUs Chang Liu, Yu Jin, Yuchen Fan , Tianrui Xiao, Lingfeng Yin, Trevor E. Carlson, Shuwen Deng, Dongsheng Wang (ISCA'26)	June 2026

WiP: DROW: Training-Free Load Speculative Execution Attacks on Apple Silicon Yuchen Fan , Yu Jin, Chang Liu, Minghong Sun, Xuanzeng Song, Tingting Yin, Shuwen Deng (uASC'26)	Feb 2026
Ragnar: Exploring Volatile-Channel Vulnerabilities on RDMA NIC Yunpeng Xu, Yuchen Fan , Teng Ma, Shuwen Deng (DAC'25)	June 2025
Application-Driven Architecture Exploration for Cross-Layer Heterogeneous Systems Yuchen Fan , Minghong Sun, Jikui Ma, Yunpeng Xu, Shunyu Mao, Liu He, Shunan Dong, Jiahao Yang, Yu Zhu, Xinhao Yang, Tianyan Zhong, Haoran Sun, Daoqi Liu, Zongle Huang, Xinyuan Lin, Huazhong Yang, Maokun Li, Yongpan Liu, Yu Wang, Zhenhua Zhu, Hongyang Jia, Shuwen Deng (arXiv:2607.23042)	July 2026

Projects

Research on Black-box Microarchitecture Reverse Engineering and Timing Side-Channel Security Threats in Modern Computing Systems • Project supported by Youth Student Basic Research Project (Undergraduate Students) of the National Natural Science Foundation of China (Grant No. 625B1004).	Sept 2025 – June 2026
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Technical Skills

Programming: C/C++, Python, Verilog, Bash, Spinalhdl, Javascript

Tools: Linux, Docker, Git, Pytorch, Cadence, Vivado

Mathematics: Calculus, linear algebra, differential equations, probability theory and stochastic processes; earned A+ grades in all related undergraduate courses