ZHAO ZHAO

✉ 12541018@mail.sustech.edu.cn · ☎ (+86) 134-2430-3121

🎓 EDUCATION

Southern University of Science and Technology (SUSTech), Shenzhen, China   2025 – Present
PhD student in National Graduate College for Engineers (NGCE)

NUS Science of Computing Summer Workshop, Singapore   July 2024
Short-term study program in Science of Computing (SoC)

Southern University of Science and Technology (SUSTech), Shenzhen, China   2021 – 2025
Undergraduate student in Mathematics and Applied Mathematics (MA)

👥 EXPERIENCE

Student Assistant of Course CS109 Intro to Programming   3 semester(2022F, 2023S, 2023F)

Jungle Chess Project   May. 2023

JavaSE   Individual Project

Jungle Chess is a video game by Java contains player mode, AI mode, loading and saving, user functions and a beautiful UI.

MineCPU   Mar. - May. 2024

SystemVerilog, RTL, CPU

- Design and implement a 5-Stage Pipelined RISC-V ISA CPU with cache, interrupt control by SystemVerilog, can run on FPGA.
- Using forward and stall to solve data hazard, branch predictor with RAS(return address stack) to solve control hazard.
- IO of MineCPU using MMIO, including buttons, switches, LEDs, 7-seg tubes and VGA.
- Can use UART to load programs.
- Can run a big program called PACMAN (a video game through VGA graphics) on MineCPU.

NUS Science of Computing Summer Workshop   Jun. - Jul. 2024

Data Analysis, Visualization

Participated in a big data analysis and visualization project, ultimately securing third place in the competition. This project involved cleaning, processing, and analyzing Beijing housing price datasets, alongside scraping commercial complex data to support analysis. It culminated in providing site selection recommendations for new commercial complexes in Beijing.

Research on Vulnerabilities in the PBS Mechanism of Ethereum 2.0   Dec. 2024 - May. 2025

Ethereum 2.0, Proposer-Builder Separation Mechanism, MEV-Boost, DoS Attack   Undergraduate Thesis

This study focuses on security vulnerabilities in the Proof-by-Stake (PBS) mechanism within Ethereum 2.0, proposing a novel attack strategy—Luring Attack. Through experimentation, we validate its feasibility and economic impact within MEV-Boost, a mainstream implementation of the PBS mechanism.

⚙ SKILLS

- Programming Languages: Python > Golang = Java > C/C++ = Rust > HDL
- Platform: Ubuntu 22.04, Windows 11
- Development: Blockchain, Data Analysis, CTF

♡ Honors and Awards

Math & Math Modeling Competitions
- *2nd Prize in Province*, China Undergraduate Mathematical Contest in Modeling   Sep. 2022
- *2nd Prize in Province*, The Chinese Mathematics Competitions   Oct. 2022
- *S Prize*, 2023 COMAP MCM/ICM   Feb. 2023
- *S Prize*, 2024 COMAP MCM/ICM   Feb. 2024

ACM & CTF
- *3rd Prize*, 2022 SUSTech ACM   Mar. 2023
- *3rd Prize*, 2023 SUSTech ACM   Dec. 2023
- *Winner's Award*, 2024 "ShangMi" Crypto Security Challenge   Sep. 2024
- *Winner's Award*, 2025 "ShangMi" Crypto Security Challenge   Jul. 2025

Honorary Title
- *3rd Prize*, Outstanding Student Scholarship of SUSTech   Sep. 2022
- *1st Prize*, Outstanding Student Scholarship of SUSTech   Sep. 2023
- *3rd Prize*, Outstanding Student Scholarship of SUSTech   Sep. 2024
- Outstanding Undergraduate Graduate of SUSTech   Jul. 2025

ⓘ Miscellaneous

- Languages: English - Fluent, Mandarin - Native speaker
- Strong teamwork ability
- Documentation: LATEX, markdown