

Zhuo Chen

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🎓 Education

Nanjing University

2021/09 - 2025/06

Bachelor of Computer Science, GPA 4.48/5.00

Nanjing, China

- Excellent Graduate and Merit Student in Kuang Yaming Honors School
- A+ Courses: Operating Systems, Computer Architecture, Compiler Principles, etc.

Yale University

2024/07 - 2025/01

Visiting Undergraduate Researcher in Computer Science

New Haven, CT, USA

📖 Publications

MobiSys'25 **Hopter: a Safe, Robust, and Responsive Embedded Operating System** [pdf]

Zhiyao Ma*, Guojun Chen, **Zhuo Chen**, Lin Zhong

In Proceedings of the 23rd ACM International Conference on Mobile Systems, Applications, and Services(MobiSys'25), Anaheim, California, US, June 2025.

arXiv'24 **HardRace: A Data Race Monitor for Production Use** [pdf]

Xudong Sun*, **Zhuo Chen**, Jingyang Shi, Yiyu Zhang, Peng Di, Jianhua Zhao, Xuandong Li, Zhiqiang Zuo
arXiv preprint arXiv:2410.18412, 2024.

</> Research Experience

Hopter: Rust-based Embedded Operating System 🌀 hopter-project

2024/09 - 2024/12

Efficient Computing Lab, Yale University, advised by Professor Lin Zhong

New Haven, CT, USA

- Safe: Compiler-inserted stack-prologue checks prevent overflows and enforce Rust's memory safety.
- Robust: Panic unwinder plus concurrent task restarts enable rapid recovery with minimal downtime.
- Responsive: Soft-lock synchronization keeps IRQs enabled for immediate, zero-latency interrupt handling.

HardRace: Dynamic Data Race Monitor for Production Use

2023/10 - 2025/03

Software Engineering Group, Nanjing University, advised by Professor Zhiqiang Zuo

Nanjing, China

- Hybrid Tracing & Pruning: Selectively inserts Intel PTWRITE only at static "may-race" points—pruned by flow-sensitive value-set and must-race-free analyses to shrink instrumentation overhead while keeping full coverage.
- Low Overhead & Full Coverage: Adds only 2.4% average slowdown on PARSEC, SPLASH-2x, and real workloads (MySQL, Nginx) while detecting every race with zero false negatives in production runs.

🏆 Honor and Awards

Excellent Graduate, Nanjing University

2025

Undergraduate Fundamental Discipline Scholarship (First Prize), Nanjing University

2024

Huawei Scholarship

2024

Changjiang Su You Scholarship

2023

People's Scholarship

2022

Merit Student, Nanjing University

2022