Jiakun Fan

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Education

Virginia Polytechnic Institute and State University September 2024
Ph.D. in Computer Science

The Chinese University of Hong Kong Shenzhen September 2020 – June 2024
BENG in Electrical and Computer Engineering *Rank: 45/137*

Core Courses: Advanced Computer Architecture (in progress), Computer Architecture, Operating system, Algorithm Design & Analysis, Computer Networks, Software Engineering, Database System, Data Structure, Discrete Mathematics, Microprocessors & Computer Systems

University of Rochester January 2023 – May 2023
Exchange Student *GPA: 3.85/4.0, Dean's List*

Core Courses: Software Analysis & Improv, Computer Security Foundation , Parallel & Distributed System

Publication

Yuzhou Tong, **Jiakun Fan**, Xuhong Cai and Yi Chen (2023), "Rate Adaptation with Correlated Multi-Armed Bandits in 802.11 Systems" IEEE ICCC 2023.

Projects

Rate Adaptation with Correlated Multi-Armed Bandits in 802.11 Systems | *C, Python* Summer 2023
- Leverage correlated multi-armed bandits to expedite determining suitable rates
- Modify the MAC80211 component of the Linux kernel to incorporate a multi-armed bandit algorithm
- Simulation and test-bed experiments are both carried out to evaluate performance

MVCC Software Transactional Memory | *Rust* Spring 2023
- Implemented software transactional memory in Rust
- Support side-effect operations
- Employ multi-version concurrency control (MVCC) to enhance the performance of writes to transactional memory

5-Stage-Pipelined-CPU | *Verilog* Fall 2021
- Implemented a Five-Stage Pipelined CPU via Verilog
- Use a forwarding module to avoid hazard like RBW (read before write)
- Add "shift" signal to support shift amount

Extra-curricular Activities

Network Coding Lab | *Research Assistant* 2021 – Present
Maintain BATS code; Implement distributed storage system based on Shift-XOR codes

Computer Community | *Member* 2021 – Present
The community hosts a monthly computer science seminar covering programming, algorithms, and technical concepts

Mathematical Contest In Modeling 2021 | *Contestants* Winter 2020
Won S award for innovative solution to "Re-optimizing Food Systems"

Skills

Languages: C, C++, CUDA, Java, Rust, Python, LaTeX, MarkDown
Tools: Git/GitHub, Unix Shell, Nvim, Hadoop3, Docker, Valgrind