YUTONG FENG

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EDUCATION

Rice University — **Houston, TX**
Master of Computer Science — *Aug 2024 – Dec 2025*

The Chinese University of Hong Kong — **Shenzhen, CN**
Bachelor of Engineering, Computer Science – GPA: 3.9/4.0; First Class Honors — *Sep 2020 – May 2024*

University of California, Berkeley — **Berkeley, CA**
Exchange Student, Electrical Engineering and Computer Science (EECS) – GPA: 4.0/4.0 — *Jan 2023 – May 2023*

Core Courses: Data Structures and Algorithms, Operating Systems, Software Engineering, Parallel Programming, Database Systems, Computer Security, Computer Networks, Full-stack Development, Computer Architecture, Compiler Construction.

WORK EXPERIENCE

Alibaba Group | Software Engineer Intern — Guangzhou, CN | May 2024 – Aug 2024

- Designed and implemented a network diagnostic tool with various speed testing algorithms and high extensibility for UNet, a network stack based on **Chromium**. Simulated different network conditions using a **Flask** server, achieving an accuracy within 0.2 Mbps when benchmarked against system measurements on Windows and macOS devices.
- Developed a smart IP address selection mechanism, resulting in a 15.5% increase in TCP connection success rate.
- Designed a long polling fallback strategy for ServerPush in a long connection channel. Optimized resource usage and reduced retransmissions, achieving a 3% increase in message delivery rate under unstable network connection conditions.
- Implemented an interface for the Apollo Player to use UNet for network requests. Integrated glue code to bridge **C++** and **C** interfaces to enable runtime addition of new virtual functions through class inheritance with minimal code changes.

Tuyoo Games | Backend Developer Intern — Guangzhou, CN | Mar 2024 – May 2024

- Performed schema optimization of a **Redis** database, reducing storage use by 14%.
- Built a game server management application using **Tkinter** to allow one-click configuration live updates for planners.
- Developed a proxy login tool using **FastAPI** to transfer user data between different production environments. Containerized the microservice with **Docker** and deployed it on **AWS** for scalability and independent deploy ability.
- Automated server reboot process with secure permission isolation, lowering restart time by 3-minutes.

AIRS LAB | Research Engineer — Shenzhen, CN | Jan 2022 – May 2023

- Built a lexer, parser, syntax analyzer, and code generator to compile Oat language into optimized **LLVM** Intermediate Representation.
- Designed efficient data structures for symbol table and enhanced the AST with type and scope information through semantic analysis.

Apartsa | Software Engineer Intern — Shenzhen, CN | May 2021 – Oct 2021

- Designed and developed a scalable front-end application with **Figma**, **React**, and **ANT Design**, creating a seamless user experience for over 2000 active users.
- Implemented user data storage with **MongoDB** and conducted user authentication testing with **Postman** and **Charles**.
- Improved routing API and integrated **OAuth**, reducing page-switching time by 32% and observed login time by 27%.

PROJECTS

Rookie DB — *A lightweight relational database management system in Java*

- Developed a buffer pool manager with a LRU linked-stack to optimize memory usage and reduce disk access latency, resulting in a 33.3% improvement in buffer pool hit rate and 20% reduction in average query latency.
- Introduced recovery mechanisms with write-ahead logging (WAL) to provide system crash recovery and durability guarantees, ensuring data integrity with a 0.001% failure rate during simulated crash recovery scenarios.
- Designed and implemented a multigranularity locking protocol to enhance transaction concurrency and isolation levels, increasing concurrent transaction throughput by 40% while maintaining strict serializability.

CUDA-Optimized File System — *A GPU-accelerated Linux-like file system supporting*

- Accelerated file IO speeds via **CUDA** multithreading for high-volume data processing.
- Refined the data structure of the page table entry, reducing memory footprint of the page table by 50%
- Optimized swap table and LRU counter with a linked stack, enhancing page swap efficiency by 95%.

SKILL SUMMARY

Programming	C, C++, Python, Java, Javascript, TypeScript, Go, SQL, CUDA
Web Dev & Database	HTML, CSS, React | MySQL, Redis, MongoDB, PostgreSQL | Node.js, Django, Flask, Spring Boot
Cloud & DevOps	AWS, S3 API, Nginx, Apache Spark, Docker, Kubernetes, Git, Terraform, Jira, GitHub
Miscellaneous	Agile Software Development, Android, Jupyter, OpenMP, MPI, GDB, Linux Kernel, Unit Testing