Ruizhe Fu

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EDUCATION

Columbia University, New York, NY — ***Expected May 2025***
Bachelor of Science, ***Computer Engineering*** — ***GPA: 4.00/4.00***
Grinnell College, Grinnell, IA — ***May 2023***
Bachelor of Arts, ***Computer Science*** — ***GPA: 4.00/4.00***
Relevant Courses: Data Structures, Algorithms Analysis, Operating System and Parallel Computing, Software Design and Development, Artificial Intelligence, Computer Network, Computer Architecture

EXPERIENCES

Siemens AG — **Costa Mesa, CA**
Software Engineering Intern — ***May 2024 – Current***

- Developed and enhanced features for NX, a leading CAD software, utilizing **Object-Oriented** programming approach with **C/C++** and **JSON**.
- Resolved customer-reported issues and submitted change package to the 2412 release baseline through development testing processes and code review.
- Led a project and collaborated with team to implement coating layer thickness visualization, adhering to the company's software development lifecycle with modification to 30+ files.
- Boosted code testing coverage rate to 95% by designing, creating and executing unit tests, UI tests, and automated tests using **Python**, **Java**, and **XML**.

Build Systems Research Lab @ Grinnell College — **Grinnell, IA**
Research Assistant — ***May 2023 – Aug 2023***

- Contributed to Riker, a forward build system that always guarantees fast and correct builds without manually listing any dependencies, using **C/C++**.
- Modeled the **POSIX** filesystem, directories and pipes to discover fast increment rebuild opportunities and guarantee every dependency is checked on each build.
- Added fresh flag and implemented **Socket artifact** to **distribute** Riker for tracing files across machines.
- Tested and built 14 open source packages including LLVM and Memcached, achieving average 94% of Make's speed on incremental builds with no risk of errors.

GPU Development Lab @ Grinnell College — **Grinnell, IA**
Software/Hardware Engineering Intern — ***May 2022 – May 2023***

- Designed parallel algorithm with **GPU** for selecting thousands of order statistics from huge data sets, using **C/C++** and **CUDA** with **Thrust** and **Cub** library.
- **Distributed** the parallel algorithms with **Open MPI** to select order statistics across machines without data set transformations, supporting **Cloud** Computing and improving speed and security measures.
- Achieved exponential increase in speed with larger vector size, ultimately reaching a 10k times speed-up for float vectors of length 2^{28} compared to copy and select method.
- Released free software "DistributedSMOS" consisting of thousands of tests on over 20 distributions.

State Grid Corporation of China — **Nanjing, China**
Software Engineering Intern — ***May 2021 – Aug 2021***

- Collected and evaluated data from the tests of dry-charge of voltage transformer.
- Filtered raw data and ensured its consistent patterns to facilitate further data manipulations in MATLAB environment, using **R** and **NoSQL**.

PROJECTS

Linux Kernel Development – *Operating System Developer* — ***Sep 2023 – Dec 2023***

- Developed and integrated a Linux Round-Robin scheduler with SMP support and made it the default scheduler for all normal processes and threads in the kernel, using **C** with VMware.
- Modified Read-Write Lock in Kernel to support blocking, improving concurrency and system performance.
- Designed and implemented a file system with support for standard file operations, including mounting, directory listing, file/directory reading, modification, creation, and deletion.

SKILLS

Languages: Python, SQL, R, Java, C/C++, C#, CUDA, HTML, JavaScript
Tools/Packages/Framework: Git, Unity, Docker, .NET, RShiny, Ansible, Kubernetes
Awards: Best Student Research Poster Award, College/University Dean List 2021-2024