Zichang Gao

gaozichang@hotmail.com | linkedin.com/in/zichang-gao

EDUCATION

Brown University 09/2021 — 05/2023
Master of Science in Computer Engineering (GPA: 4.0/4.0) *Providence, RI*

- Courses: Operating Systems, Distributed Systems, Computer Systems, Scientific Programming in C++

Dalian University of Technology 09/2016 — 06/2020
Bachelor of Engineering in Automation *Dalian, China*

- Courses: C Programming, Data Structure, Principles of Computer, Digital Circuits and Systems

WORK EXPERIENCE

Amazon 05/2022 — 08/2022 & 01/2024 — Current
SDE Intern & Full-time SDE1 *Bellevue, WA*

- **Data Integration:** Contributed to developing data integration pipelines using **AWS Glue, S3, and Redshift database** to compile key metrics for service quality assurance, facilitating business analysis and decision-making.
- **Data Broker System:** Collaborated in creating a high-volume data broker service using **Java** and AWS infrastructures, including **Kinesis Data Streams** and **SQS Message Queues**, focusing on data cleaning, sampling, and enrichment to ensure high data quality and delivery efficiency.
- **Data Privacy System:** Assisted in building a data privacy system using **AWS Athena, Redshift, Lambda, and Step Functions**, automating account closure requests for GDPR compliance and secure data handling.
- **On-Call Duty:** Ensured system stability by monitoring and resolving issues, preventing major outages.

Brown University 03/2023 — 05/2023
Teaching Assistant of Operating Systems *Providence, RI*

- Held informative TA sessions, proficiently assisting students in debugging projects, offering suggestions, and explaining homework concepts effectively.
- Maintained a comprehensive understanding of the curriculum, assignments, and projects while actively collaborating in weekly TA meetings to analyze coursework and provide feedback to the professor.

Intel 07/2020 — 12/2020
Software Engineer Intern *Dalian, China*

- Developed web applications using **C#, .NET Web APIs, Angular, jQWidgets, and SQL Server**.
- Optimized semiconductor manufacturing configuration processes, boosting cross-departmental collaboration and operational efficiency.

PROJECTS

Brown CS138 Distributed Systems Labs: Raft 05/2023
Golang, gRPC

- Built a fault-tolerant distributed Key-Value storage system with the Raft consensus algorithm.
- Fully based on the paper, achieved leader election, log replication, and log commitment.

Brown CS169 OS Labs: Weenix - A Unix-like fully functional operating system 05/2022
C, GDB, Makefile, QEMU

- Built key OS components, including processes, threads, scheduler, drivers, virtual file system, System V File System, virtual memory, and page fault handler, improving understanding of kernel internals.
- Implemented essential system calls from bottom to top, including **fork, mmap, brk, waitpid, read, write, link**, showcasing proficiency in kernel-user space interactions and process lifecycle management.
- Utilized **QEMU** for hardware emulation and **GDB** for in-depth kernel debugging, identifying and resolving complex issues in memory management, file systems, and page fault handling.
- Configured and automated the build process using Makefile, enhancing the development workflow.

Brown CS33 Computer Systems Labs 12/2021
C, GDB, Makefile

- Developed a Unix-like shell with features including command parsing, process management, and signal handling.
- Built a custom malloc function using low-level system calls such as sbrk.
- Implemented a concurrent key-value store, utilizing pthreads and fine-grained locking for efficient data access and modification.

SKILLS

Programming Languages	Assembly, C/C++, C#, Python, Go, JavaScript/TypeScript, SQL, HTML
Framework and others	PySpark, Angular, ASP.NET, Git, CMake, Qt, SQL Server, Docker, LaTeX