

RUIHANG LIU

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EDUCATION

Boston University, Boston, MA *December 2024*
Bachelor of Arts / Master of Science in Computer Science (Specialized in Data Centric System) GPA: 3.75

Relevant Coursework:

Data Structures	Algorithms	Database Systems	Embedded System
Software Engineering	Computer System	Distributed System	Streaming System
AI/ML	Programming Language	Android Development	UI/UX

Extracurricular:

Boston University Snowboard Team, Boston University Computer Science Ambassador

WORK EXPERIENCE

Synergies Intelligent Systems, Cambridge, MA *Sep. 2024 - Present*

Full Stack Software Engineer Intern

- Design, modify and optimize the front-end of our e-commerce website to enhance user experience and performance.
- Integrate AI models into the website to enhance functionality and provide advanced features to users.

iQiyi.com, Beijing, China

Jun. 2023 - Aug. 2023

Backend Software Engineer Intern

- Architected with Spring Boot framework to enhance the performance of iQiyi's 110.7 million users' Big Data Platform, reducing response time from 3 mins to 20 secs with multi-threaded system design.
- Crafted scalable APIs to bridge backend technologies with front-end UIs for data scientists.

Boston University Department of Computer Science

Sep. 2022 - May. 2024

Teaching/Course Assistant

- Tutored 180+ students in functional programming, OCaml and Android application development in office hours.
- Participated in assignment making to enhance student learning.
- Created and graded assignments of 180+ students within a 4-day turnaround.

PROJECTS

ChessMS

- ChessMS, winner at BostonHack 2022, is an chess AI agent on SMS Text.
- Designed and deployed a serverless database using CockroachDB.
- Connected a local Flask server with Twilio clients using ngrok and WebHook.

Doodle Jump AI

- Utilized NEAT algorithm, a genetic AI algorithm, to train an AI agent to play Doodle Jump.
- Explored various input features and reward systems, adjusting NEAT algorithm parameters for optimal results.

AI Ball Balancing Robot

- Leveraged reinforcement learning techniques to train an AI agent for real-time ball balancing on a robot.
- Engineered bespoke mechanisms with signal processing capabilities, using UART communication to translate AI predictions into precise robotic arm movements, enabling accurate ball balancing in physical environments.

MovieDate

- Architected backend server and wrote HTTP RESTFUL API for a social media application.
- Enhanced relational database performance with indexes, foreign keys, and database design, balancing storage and speed. This streamlined data handling and front-end integration, outperforming document-based alternatives.
- Deployed CockroachDB for high availability and throughput by utilizing its distributed architecture.

Distributed Data Processing Systems

- Developed a custom MapReduce system in Go, strategically employing parallel computation to optimize distributed data processing, thereby significantly enhancing availability and throughput.
- Engineered a RAFT-based distributed systems in Go, for robust log consensus in a distributed setting.

TECHNICAL SKILLS

Languages	Python, Java, C, Swift, Kotlin, Go, R, SQL, OCaml, JavaScript
Databases	MySQL, CockroachDB, Firebase
App Development	Native iOS, Native Android, Flutter, React
System Development	DBMS, Distributed System, Streaming System, Embedded System
Software Development	UI/UX, Frontend, Backend, Full stack