Xiruo Wang

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EDUCATION

University of California San Diego   Expected graduation: June 2026

M.Sc in Electrical and Computer Engineering   CA, U.S.

Shanghai Jiao Tong University   Sept 2020 - Aug 2024

B.Eng. in Electrical and Computer Engineering   Shanghai, China

University of Michigan – Shanghai Jiao Tong University Joint Institute (UM-SJTU JI)

SKILLS

Programming Languages: C, C++, Golang, Java, Python, JavaScript, Typescript, SQL, HTML, CSS, Shell, CUDA

Frame: React.js, Next.js, SpringBoot, MongoDB, PostgreSQL, Redis, Kafka, etcd, Zookeeper

Tools & Environments: Linux, Git, Docker, Conda, Markdown, LaTeX

DevOps: AWS, CI/CD, Pulumi, .NET, Figma

EXPERIENCE

HeartByte   April 2025 - June 2025

Participated in Fullstack Software Development: **Typescript/Javascript, React, Next.js**   Remote, U.S.

- Implemented Terms of Use signing flow for both email and Google authentication, including a pop-up notification for existing users.
- Built front-end interfaces using **Tailwind CSS and HeroUI**: developed a customized reader with adjustable font, margin, background, and theme settings to enhance readability and user personalization across mobile and desktop.
- Integrated a **RESTful API** based query system with **Firebase (NoSQL)** for user management on the admin dashboard.

Enflame Technology   Jan 2024 - Apr 2024

Software Development Intern - Deep Learning Chips Development Company : **Python, Pandas, CUDA**   Shanghai, China

- Developed a **Python** local tool for automatic performance analysis and comparison of gpu, integrating 9 distinct modules to handle task pipeline. Saved **75%** manual work with great accuracy and much faster speed.
- Integrated with **NVIDIA Nsight** platform and accepting **50K+** entries of **SQLite** files and **Excel** reports to analyze metrics for **CUDA** operator-specific performance, execution cycles, timing, latency gaps and bandwidth.

PROJECTS

Video Streaming Platform with Live Comments | *full stack Go project*   Apr 2025 - June 2025

- Supported user video upload and playback with the **MPEG-DASH** standard; utilized **FFmpeg** for ~**40%** faster playback loading.
- Designed scalable distributed storage servers with consistent hashing for dynamic node management, supporting **10×** faster horizontal scaling and low-latency communication via **gRPC + Protobuf**.
- Enabled high-concurrency live comments using **Redis Pub/Sub** for broadcasting and **MongoDB** for asynchronous history records.
- Deployed the cluster remotely on **AWS EC2**. Utilized **etcd** for video metadata consistency and service registration and discovery.

Distributed Redis Server | *Go Middleware*   Mar 2025 – Apr 2025

- Built a key–value database with **AOF persistence mechanism** for data durability and consistency, supporting customizable TTLs.
- Achieved **2.5×** higher throughput through a **Reactor**-based network model and **goroutine pooling**, with an independently implemented **RESP protocol parser**.
- Designed and implemented a **Skip List**-based sorted set structure enabling efficient rank and score queries.
- Enabled balanced data distribution using **virtual nodes**, improving system load balancing and supporting online elastic scaling.