

# YUANQI WANG

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## Education

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### University of Pennsylvania

*Master of Science in Engineering in Computer and Information Science* GPA: 3.76/4.0

Sep 2021 – May 2024

Philadelphia, PA

### Shanghai Jiao Tong University

*Bachelor of Science in Biotechnology* GPA: 3.9/4.3 Rank: 1/16

Sep 2015 – Jun 2019

Shanghai, CN

## Technical Skills

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**Languages:** C/C++, Python, Java, TypeScript, JavaScript, HTML/CSS, SQL

**Technologies/Frameworks:** Node.js, React, Svelte, Tailwind CSS, WebGPU, MySQL, MongoDB, Redis, Jest, Cypress, Docker, AWS Lambda/S3 Bucket/SQS/RDS, Serverless, PyTorch, Pandas, Unix, Git

## Experience

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### Portable EMR Solutions Inc.

*Software Engineer Intern - Full Stack - JavaScript, Angular, React Native*

May 2023 – Aug 2023

East Brunswick, NJ

- Integrated **OAuth 2.0** in **Angular** to enable seamless authentication and synchronization with **500+** health providers.
- Leveraged **AWS Lambda** and **Serverless Framework** for reliable FHIR data parsing and CRUD operations.
- Improved **React Native** iOS app's accessibility and visuals for **508 Compliance**, with deployment on the App Store.

### HPC-AI Technology Inc.

*Software Engineer Intern - Python*

May 2022 – Aug 2022

Singapore, SG

- Created a **parallel framework** to construct *AlphaFold 2* inference workflows, based on AI scaling framework **Ray**.
- Sped up the inference of *AlphaFold 2* by **200%** by parallelizing sequence processing operations with **Ray Workflow**.

### High Performance Computing Center, SJTU

*Research Assistant - C/C++*

Sep 2019 – Jun 2020

Shanghai, CN

- Assisted creating *Centauri*, a distributed graph-based **Approximate Nearest Neighbor Search** (ANNS) System.
- Achieved memory compression rate of **70%** using **Compressed Sparse Row** format and **k-bit integer coding**.

## Projects

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### Group-based Social Network Web App | *JavaScript, React, Node.js, Express, MongoDB, Heroku*

Nov 2021

- Created *Ginger*, a group-based social network application using the **MERN** web development technology stack.
- Built backend using **Express** and **MongoDB**, exposing **REST APIs** for object creation, modification, and deletion.
- Deployed **WebSockets** for **push notifications** and **infinite scroll**, enabling live post feeds on client side.

### Steam Reviews Analytics Web App | *TypeScript, Svelte, Tailwind CSS, MySQL, MongoDB, Redis, Docker*

Mar 2024

- Developed a smooth frontend using **Svelte**, featuring advanced review search with interactive analytics via **D3**.
- Built **REST APIs** with **Express**, **MySQL**, and **MongoDB** for efficient storage and retrieval of over 100M reviews.
- Optimized SQL queries by **14x** using composite indexes and utilized **Redis** for fast repeated request handling.

### Anime4K-WebGPU: Real-Time Video Upscaling | *TypeScript, WebGPU*

Mar 2024

- Developed cross-platform **CNN/GAN-based** video upscaling pipelines using **WGSL** compute shaders.
- Enabled **cross-platform**, client-side upscaling with hardware acceleration, leveraging the capabilities of web browsers.
- Released a comprehensive **NPM package** with APIs for integration into existing video and image rendering workflows.

### Cloud-based Email and Storage Platform | *C++, POSIX*

Nov 2022

- Built *PennCloud*, a **cloud-based, distributed system** for email service, storage service, and user management.
- Composed **HTTP servers** with **dynamic load-balancing**, **request routing**, and **cookie** compatibility enabled.
- Constructed **key-value storage service**, featuring replica recovery and sequential data consistency.

### Distributed Data Analytics and Search Engine Framework | *Java, AWS EC2*

May 2023

- Created a **distributed hash table** and HTTP server in Java, enabling CRUD operations for distributed data storage.
- Implemented a scalable analytics engine inspired by **Apache Spark**, offering **MapReduce** functionality at scale.
- Designed a mini search engine utilizing an advanced **web crawler**, **inverted index**, **PageRank**, and **TF-IDF**.