Tianyin (Andrew) Wang

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Education

Carnegie Mellon University Aug. 2023 - May 2025 (Expected)
Master of Science in Information Networking *Pittsburgh, PA*

South China University of Technology Sept. 2019 - July 2023
Bachelor of Engineering in Computer Science and Technology | GPA: 3.96/4.0 *Guangzhou, China*

Work Experience

Software Engineer Intern Feb. 2023 - June 2023
China United Network Communications Co., Ltd. *Guangzhou, China*

- Collaborated to establish frontend user interface based on **ReactJS**, implement **RESTful APIs** and Microservices using **Spring Boot** on backend, and construct database cluster with **MySQL**.
- Orchestrated the deployment of auto-scaled, load-balanced, and distributed web services using **Docker** containers and **Kubernetes**, and distributed service framework HSF.
- Increased RESTful services' QPS by **25%** by using **Kafka** as message broker and **Redis** for caching.
- Achieved fast search response with asynchronous execution using **Elasticsearch**.
- Improved bundle caching efficiency by employing code splitting through **Webpack**, resulting in a **30%** reduction in page load time.

Project Experience

E-commerce Website [GitHub | Deployment] Java, JavaScript

- Built and deployed an e-commerce website for customers to shop and sellers to manage products/orders.
- Constructed frontend with React, backend with SpringBoot and database with **Hibernate** and MySQL.
- Created a Git-based continuous integration/continuous deployment (**CI/CD**) workflow for the Web app
- Increased system's throughput by 20% using multiple threads to consume messages in Kafka queue.

Media Player [GitHub] C++

- Led a team in developing a feature-rich media player; developed functionalities such as video reverse playing and video preview by **FFmpeg**, audio visualization by **OpenGL** and user interface by **QT**.
- Established a video frame encoder-decoder system by applying the **Producer-Consumer Pattern** with blocking queues to support playing video and sound.
- Developed a safe and consistent multithreading framework to manage concurrent tasks.

Linux File Management HTTP Server [GitHub] C++

- With Linux **sockets**, built a **Reactor** framework to concurrently demultiplex and dispatch events.
- Accomplished a thread pool to call threads to process network I/O events in blocking queue.
- Devised a timer leveraging ascending linked list to simulate **HttpSession** for **Cookie authentication**.
- Created a semi-asynchronous logging system to efficiently write logs to disk.

Deep Learning Web App [GitHub | Deployment] Python

- Trained an image classification model using **Pytorch**, and applied Knowledge Distillation to reduce computing costs; built REST APIs with **Flask** and deployed the web application on **AWS**.

Skills

- **Languages**: Java, C/C++, Python, Go, SQL, JavaScript, HTML/CSS
- **Tools/Frameworks**: Spring Boot, Docker, Kubernetes, MySQL, Redis, React.js, Node.js, Webpack, Kafka, Hibernate, Elasticsearch, PyTorch, Flask, FFmpeg, OpenGL, Qt
- **Development**: Git, AWS, OOP, CI/CD, RESTful API, Unit Testing, CMake, Unix/Linux