

Flynn (Yinmingren) Fu

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EDUCATION

Santa Clara University

San Jose, United States

College of Engineering, MS, Computer Science and Engineering

Sep. 2024 – Expect Jun. 2026

- Coursework: Computer Architectures, Design and Analysis of Algorithms, Operating Systems, Computer Graphics, Data Structures, Distributed Systems, Logic Design
- **Internship available start and end dates: Jun 13. 2025 – Sep 23. 2025**

South China University of Technology

Guangzhou, China

College of Mathematics, BS, Information and Computing Science

Sep. 2020 – Jun. 2024

- Coursework: Probability, Operations Research, Machine Learning, Computational Intelligence

PROFESSIONAL EXPERIENCE

ZWSOFT

Guangzhou, China

C++ Development Engineer

Jul. 2023 – Oct. 2023

- Developing the **ZWMemoryPool** library by using **Boost memorypool** and **Singleton Patterns**, reducing memory usage by over **15%** and speeding up **model node import** and **rendering** by over **50%**, while optimizing the underlying memory management logic.
- Upgraded **ZWCAD export module** with VTK4.0 support, including structured and unstructured grid models. Combined model export algorithm with **memorypool** operations, speeding up model export process.
- Optimized memory management for vertex, line, polygon and other node types by replacing **new/delete/malloc/free** with **allocate/deallocate** operations in **ZWMemorypool**, reducing memory usage and accelerating allocation times.

JD.COM

Guangzhou, China

Business Technical Support Intern

Jun. 2023 – Jul. 2023

- Utilizing data preprocessing libraries (**Pandas, Scikit-Learn, Seaborn**) to process **real corporate transaction data** and generate relevant metrics, supporting team collaboration and facilitating negotiations with enterprises.
- Implementing algorithm to identify **abnormal orders** based on **real trading data** and **Statistical Learning model** to calculate overdue probabilities, predict order handling times, and estimate payment cycles.

PROJECT EXPERIENCE

A High-Concurrency C++ Server Library Based on Muduo Library

Jun. 2024 – Sep. 2024

Framework: C++, Linux

- Implementing a high concurrency server using **non-blocking, I/O multiplexing**, and the **Reactor model**, referencing the **Muduo** source code.
- Developing with a multi-threading model, implementing classes like **EventLoop, Poller**, and **Channel** to enable loop listening, request dispatching, and event handling.
- Gaining proficiency in basic **Linux network programming** and the fundamentals of **I/O multiplexing**.

MathR: An Educational AI-Based App for Math Image Recognition and Reasoning 🤖

Dec. 2023 – May. 2024

Framework: Java, JavaScript, Python, Android Studio, Kotlin, SQL, Linux (Ubuntu)

- Deploying **server backend** and **pre-trained model** on Linux platform based on the **TCP Socket**, supporting **nonblocking multi-threaded socket communication** and **remote model API calls**.
- Developing an Android app, enabling fast and stable **client-server communication** and **image recognition** using **Android Studio** and **SQLite**.
- Training a language model on **math problem datasets** (e.g., Math, GSM8K) to enhance **recognition** and **reasoning** in images and mathematical formulas, integrating **LLMs** (e.g., GPT, ERNIE, Llama) with **OCR technology** (transformer-based model, CNN).

Lightweight multi-thread C++ server

Apr. 2023– Jul. 2023

Framework: C++, Linux

- Developed a **multi-reactor, multi-thread C++ web server** using Boost and STL, implementing a "**one thread one loop**" model with a Main **Reactor** to monitor file descriptors and dispatch requests to Sub Reactors. Used **Round Robin** to implement **load balancing**.
- Optimized server performance by using **Boost's thread pool** and **memory pool** to ensure thread safety and implemented a simple **asynchronous logging system** by using **double buffering** to enhance logging efficiency.

TECHNICAL SKILLS

- **Programming Language:** C/C++/C# (Advanced), Python (Advanced), Go (Advanced), Java(Advanced), JavaScript, HTML, SQL, MATLAB, R, Bash/Shell, XML
- **Platforms & Framework:** Server/Client development, Kafka, Spring Boot, Nginx, Muduo, Netty, Windows .Net Framework /WPF, Linux, Git, Kubernetes, Docker, AWS, Database (MySQL, Redis, SqlServer, MongoDB), Pytorch, TensorFlow, Scikit-Learn
- **Concepts & Lib:** C++ (Boost, STL), Python (Matplotlib, Pandas, Flask), Reactor, Proreactor, Design Pattern