Zaichen Hao

felixhao772@gmail.com
(224) 844-1206
Ponte Vedra Beach, FL | https://felix772.github.io

Education

Computer Science

University of Florida • Gainesville
05/2027

- UF Distinguished Scholars Scholarship Recipient
- **Study Abroad**: Nanyang Technological University, Introduction to Artificial Intelligence, Human Computer Interaction
- **Relevant Coursework**: Operating system, Database&information system, Software engineering, Computer Organization, Data structures&Algorithms.
- **Leadership**: Assistant Director of Technology at the Chinese Students and Scholars Association

---

Technical Skills

Tools: Git, Nvim, Google Benchmark, perf, Languages: C++, Python, Java, SQL, Bash, Data Structures & Algorithms, Multithreading, Memory Management, Low-Latency System Design, Linux, Machine Learning & Statistical Analysis

---

Project and Experience

Order Matching Engine (Single-Asset)

HFC Introductory Project • github.com/Felix772/Match-Engine
11/2025 - Present

- Designed and implemented a **high-performance order matching engine in C++** for a single equity using **integer-based price representation** to avoid floating-point inaccuracies.
- Enforced **exchange-style constraints**, including **price–time priority**, deterministic execution, and strict correctness guarantees.
- Implemented **ordered price-level maps** for matching and an **unordered id-location map** for removal.
- Optimized for **low latency and consistent performance**, achieving **~2.2 µs effective per-order latency** and sustaining **~450k orders/sec** on a single core under benchmarked load.
- Profiled and analyzed performance using **Google Benchmark** and **Linux perf**, identifying and eliminating bottlenecks in hot code paths.

ML Project Group Leader

Assistant Professor, Leonard Ng Wei Tat • Nanyang Technological University
06/2025 - 07/2025

- Led a team of 5 in the course **Introduction to Artificial Intelligence**, defining project goals, task breakdowns, and technical direction.
- Built and evaluated **machine learning models** (linear regression, random forest) to predict movie revenue using features such as genre, budget, language, and cast. Used real data from 2019 -2024.
- Optimized the random forest model through k-fold cross-validation and hyperparameter tuning, improving **R^2 from 0.47 to 0.86**.
- Presented findings and technical methodology to peers and faculty.

Online Teaching Assistant

Self Employed Services – Online
05/2024 - Present

- Facilitated online learning sessions for **30+ college students** in calculus, physics, and computer science.
- Delivered **50+ lectures** covering **C++ fundamentals, Bash, Neovim workflows, CPU architecture**, and **LeetCode-style algorithmic problem solving**.
- Explained complex technical concepts clearly to CS peers and non-expert audiences, strengthening written and verbal communication skills.