

Yi-Qing (Elliot) Lin

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EDUCATION

University of California, Davis, Master of Computer Science (GPA 3.9)

Master of Science in Computer Science

Davis, CA
September 2022 – March 2025

National Tsing Hua University (NTHU)

Bachelor of Science in Computer Science

Hsinchu, Taiwan
September 2017 – June 2021

WORK EXPERIENCE

Collaborative and Social Computing Lab

January – December 2024

Software Engineer | Python, LLM, RESTful API

United States

- Developed a Python-based user-centric AI chatbot integrating minimum domain knowledge to support new users in planning goals and performing tasks on domain related website
- Achieved task completion rate by 90%** by implementing dual-level state machine dialogue engine to support user in task performance, ensuring proper guidance are provided to users
- Reduced task completion time by 30%** by embedding action tokenization in the user interface for seamless interaction, streamlining user interaction with user interface and chatbot
- Reduced dialogue agent development cycle by 50%** by adopting modularized design of domain knowledge integration, accelerating dialogue agent creation and test process

Scientific Computing on Parallel Environment Lab

July 2021 – June 2022

Software Engineer | Python, Computer Vision

Hsinchu, Taiwan

- Improved 3D model reconstruction efficiency by 95%** by developed a pipelined automated 3D object reconstruction system to automate the labor-intensive drafting process in software such as Rhino and AutoCAD
- Achieved visual similarity rate by 90% by adopting instance segmentation and building after primitive reconstruction, introducing spearheaded concept for 3D object reconstruction using single image

Multi-threaded Ethereum Transaction Chain Analyzer | Python, HPC, Threading,

- Reduced data collection time by 87.5%** by developing a multi-threaded Python blockchain analyzer that processed 500+ Ethereum addresses simultaneously across 8 parallel threads
- Optimized file I/O operations, reducing disk write bottlenecks by leveraging in-memory storage before batch writing

Precision Tuning on Fortran Programs | C++, Python, Loki, Fortran

- Enhanced Fortran program efficiency by 37%** by developing floating point precision tuning program to reduce computational heavy instructions caused by double precision floating variables
- Preserving program semantics while optimizing control flow structure by implementing a systematic source to source transformation with advanced abstract syntax tree (AST)

GPU-Accelerated Cellular Automation | C++, CUDA, GPU, HPC

- Reduced 5000x5000 grid cellular automation execution time by 99% compared to sequential processing by adopting CUDA GPU parallelization using 1024 block/thread optimization
- Achieved data throughput improvement by 20%** by designing an asynchronous data transfer pipeline using CUDA streams, enabling overlapping computation and memory transfer

Interactive Three Point Bending Data Analyzation Tool | Python, PyQt6, Matplotlib, Data Engineering

- Developed a Python-based interactive data visualization application with PyQt6 and Matplotlib to avoid the labor-intensive work in analyzing raw three point bending data with Excel
- Improved data analyzation efficiency by 90%** by adopting data preprocessing for large data and systematic analyzation, maintaining consistent and reproducible outcomes and reducing manual effort and cognitive loading to minimum

Resume Platform on Blockchain | TypeScript, Vue.js, Python

- Developed a decentralized resume platform, leveraging blockchain technology to ensure data integrity and transparency
- Implemented RESTful APIs and CRUD level functionality in backend to maintain reliable database management

SKILLS

Programming: Python, C/C++, C#, JavaScript/TypeScript, SQL, OpenCV, OpenMP, MPI, CUDA, Linux, Git, CI/CD, Docker

Web Development: RESTful, React, HTML, CSS, NodeJS, Vue, Bootstrap, MongoDB, MySQL, PostgreSQL, TCP/IP