



SIDNEY LU (CHIA-HAO)

Senior Software Engineer

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SUMMARY

Startup with AI-driven full-stack development and system design, focusing on end-user UI/UX. Passionate about learning innovative technical and researching AIGC concepts across various domains. Collaborates in cross-functional teams with long-term strategic business blueprint.

EXPERIENCE

Co-Founder, Full-Stack Developer, startup team 2023 Jul - Present

React, TypeScript, FastAPI, Python, CI/CD, Docker Compose, Kubernetes, Linux, Nginx, SQL, Auth, AWS

- Led product initiatives, optimized team member efficiency productivity by a factor of 10 and ensuring that efforts were focused on high value outputs.
- LangGraph-GUI: Zero to One AIGC workflow system with scalability and fault tolerance using modern full-stack technologies on NVIDIA GPU or cloud.
- Proficient in domain knowledge based prompt engineering for various AI including art AI and LLMs

Computer Vision R&D / Systems and DSP Engineer, Qualcomm 2022 Feb - 2023 Jun

Optimization Algorithms, Computer Vision, SIMD, C++, Python, DSP, CI/CD, TeamCity, Docker

- Developed and optimized approximation algorithms for 3D environment reconstruction on mobile DSP, achieving a 75% reduction in runtime and significantly enhancing real-time performance.
- Streamlined integration processes with cross-functional teams, improving modular system efficiency.

R&D Software Engineer / Graphics, HTC ViveVR 2018 Sep - 2021 Dec

Optimization Algorithms, Computer Graphics, Real-Time Rendering, Computer Vision, Streaming, C++

- Optimized advanced VR algorithms achieving a 130% performance increase, using DX12, DX11, AMD and NV SDKs through GPU profiling and benchmarking tools including GPUView.
- Enhance streaming pipeline performance up to 60% with Nvidia and AMD GPU hardware SDKs include NVCODEC by optimized I-frame processing with header modification and segmentation.

Software Engineer Intern, HTC (Intern) 2017 Jul - 2017 Aug

- Implemented machine learning algorithms in computer vision using numpy

SIDE PROJECT

Game Designer, Product Manager, UI/UX 2021 - Present

- Competitor Analysis, Game Mechanics, Narrative Storytelling, Numerical Balancing, D&D.

Algorithmic Trading 2023 - Present

- Implemented rule-based trading strategies in cryptocurrency markets using CCXT or PineScript.

Streaming 2021 - Present

- ffmpeg in docker to process image/video/audio encoding/decoding.

C++ Technical Content Contributor 2018 - 2021

- Authored modern C++ technical articles for biweekly newsletter <https://samtsai.org/thecppnews/>.

EDUCATION

 M.S. Computer Science **National Chiao Tung University**, Institute of Multimedia Engineering 2016 - 2018

 B.S. Earth Science **National Cheng Kung University** 2010 - 2014