Nai-En Kuo

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Education

University of California, San Diego, Master of Science in Computer Science · Sept 2023 – Mar 2025
Relevant Coursework: Embedded System, Parallel Computation, NLP, Recommender system
National Chiao Tung University, Bachelor of Science in Computer Science · Sept 2017 – Jan 2021

Experience

Software Engineer Intern, MediaTek – San Diego, CA · June 2024 – Dec 2024
- Built backend services for internal web applications, streamlining the tracking of customer report resolutions.
- Developed 40+ features and APIs using Python Flask and MongoDB, enhancing efficiency and scalability.
- Optimized database structures and queries, reducing response times by 67%. Refactored codes for readibility.

Software Engineer Intern, TSMC – Hsinchu, Taiwan · July 2022 - Sept 2022
- Migrated system to Kubernetes-based environment, leveraging CI/CD pipelines for seamless deployments.
- Developed a Java Spring Boot service to optimize reporting processes, doubling data processing speeds.

Software Engineer Contractor, DBS Bank – Taipei, Taiwan · July 2020 - Jan 2021
- Developed a Line chatbot with automatic phone dialing via Twilio API, improving customer support efficiency.
- Automated data collection for recruitment using Python (Selenium, Pandas), accelerating hiring processes.

Publication

Using programmable p4 switches to reduce communication costs of parallel and distributed simulation · Dec 2022
Published in IEEE Globecom (DOI:10.1109/GLOBECOM48099.2022.10001195)

Honors

AIS3 EOF CTF 2021 Finalist (Rank: 10) – Taipei, Taiwan · Feb 2021
- Solved security challenges in Cryptography, Reverse Engineering, Web and Binary Exploitation (Pwn).

2020 ICPC Asia Taipei-Hsinchu Site Programming Contest Bronze Medalist · Nov 2020
- ICPC official certificate: **C300DHLH34B2**

2020 Mei-Chu Hackthon 3rd Place – Hsinchu, Taiwan · Oct 2020
- Developed an application allowing Line users to access and share tweets seamlessly via the Twitter API.

Projects

Parallel Computation · April 2024 - June 2024
- Optimized General Matrix Multiplication (GeMM) on ARM CPUs using packing and SVE vectorization.
- Enhanced GeMM on NVIDIA GPUs with CUDA, leveraging thread and instruction-level parallelism.
- Achieved 1373 Gflops on a 384-core SDSC supercomputer with OpenMPI for large-scale matrix computations.

Multifunctional Aerial Gazer · Jan 2022
- Designed a face-tracking drone that autonomously tracks the owner's face for filming or photography.
- Leveraged OpenCV and TensorFlow for real-time face detection and head pose estimation, and utilized MediaPipe for hand gesture recognition to enable intuitive drone control.

Skills

Languages: Python, C++, Java, Golang, SQL, JavaScript, Haskell, CUDA, PHP, Vitis HLS

Technologies: Flask, Spring Boot, Kubernetes, MongoDB, TensorFlow, Selenium, CI/CD, Git, Linux