Wen-Hsing Huang

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WORK EXPERIENCE

ASM America **02/2024 - Present**

Software Engineer II *Phoenix, AZ*

- Fixed production issue of equipment alarm feature by resolving conflict IDs mapping from multiple alarm sources.
- Resolved critical IO communication issue in the system, boosting a feature response rate by 18x and enhancing user experience.
- Ensured flawless software installation & operation through onsite & on-call troubleshooting in the cleanroom lab.

Microsoft **07/2021 - 01/2022**

Program Manager Intern *Taipei, Taiwan*

- Developed dashboard to monitor demand for pricing strategies, video ads demand, market pricing comparisons, and global availability for Microsoft Audience Network.
- Created and optimized data pipelines by adjusting query formulation with **COSMOS**, **Azure Data Explorer**, **SCOPE**, and **C#**.
- Leveraged **Power BI** to analyze big data and design visualizations for data insights.
- Performed ad-hoc analysis of production alerts, synthesized data into actionable summaries for developers for problem resolution.
- Analyzed data to validate the feasibility of proposed metric for image stock keyword recommendations.
- Redesigned sales promotion tactic template schema and established database connectivity.

PROJECTS

Convolution parallel computing optimization of CNN (CS 483 Applied Parallel Programming)

- Profiled and addressed performance bottlenecks with **Nsight Compute** & **Nsight Systems**.
- Optimized parallel convolution algorithm with **CUDA C++**, achieving a 53% performance increase over the baseline using tiled shared memory, loop unrolling, FP16 arithmetic, and Streams.

Distributed Machine Learning Inference System (CS 425 Distributed Systems)

- Developed a high-performance distributed system using **Python** and **socket programming** over **TCP** and **UDP** protocols, integrating failure detection, membership management, file system operations, and job scheduling for optimal efficiency.
- Incorporated SWIM-style failure detection and ring-based membership for enhanced availability and fault tolerance.
- Devised an efficient job scheduling algorithm to balance processing time, ensuring a maximum 20% variance between batches.

Crime Data Web Application (CS 411 Database Systems)

- Developed a robust data pipeline using **Python** and **SQL** to preprocess and import crime dataset into **GCP Cloud SQL instance**.
- Optimized **MySQL** database performance by implementing stored procedures and triggers for efficient data retrieval and manipulation.
- Engineered a scalable backend using **Node.js**, providing comprehensive CRUD functionality to interact with the database.
- Designed and developed intuitive frontend user interface using **React.js** and PrimeReact.
- Deployed web app on Linux VM within **GCP Compute Engine** by configuring virtual private cloud environment and managing processes using PM2.

EDUCATION

University of Illinois Urbana-Champaign **08/2022 - 12/2023**

Master of Computer Science *Champaign, IL*

- **GPA**: 3.81 / 4.0

National Central University **09/2018 - 06/2022**

Bachelor of Science in Computer Science and Information Engineering *Taoyuan, Taiwan*

- **GPA**: 3.98 / 4.0, **Rank in Dept.**: 1^{st} / 101

SKILLS

Programming Languages: Python, Javascript, C/C++, Java, C#, SQL, Matlab, HTML/CSS, Assembly, VHDL, LaTeX

Tools & Frameworks: Git, Google Cloud Platform, CUDA, Nsight Compute, Nsight Systems, React.js, Node.js, MySQL, MongoDB, Neo4j, Power BI, Android

Languages: English (Fluent), Mandarin (Native)