Kai-Chih (KC) Huang

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EXPERIENCE

Liberty Technology Solutions Houston, TX
Software Engineer Intern Jan. 2025 – Present
- Designed and built an **IoT** solution using **ThingsBoard**, enabling user, factory, and device management, including dashboard visualization, device control, and alert systems, with the goal of offering it as a future service to clients. Prototyped core functionalities, receiving positive feedback from leadership for potential deployment.
- Developed firmware for IoT devices to enable real-time data collection and transmission using the **MQTT** protocol.

Brilltek Taichung, Taiwan
Software Engineer Intern (Backend Engineer) June 2023 – Aug. 2023
- Engineered 6 production report APIs for the company's flagship Manufacturing Execution System (MES) using **Express.js, MySQL,** and **Docker**, improving data reporting efficiency across manufacturing operations
- Refactored the shift management API, reducing codebase by **43%** and improving query speed by **20%**
- Introduced an **Nest.js** platform to integrate internationalization (i18n) across all company projects, enabling external translators to translate directly on the web interface without accessing project code
- Automate data synchronization between the i18n platform and project repos by developing custom **Bash** scripts and configuring **GitLab-CI** pipelines, reducing manual updates by 95%

NielsenIQ (formerly Nielsen) Shanghai, China
Analyst Apr. 2019 – Mar. 2020
- Managed project timelines, conducted primary and secondary research, and delivered data-driven reports
- Participated in 10+ projects including product pre-launch test, customer segmentation, and market entry research

SELECTED PROJECTS

YouTube Downloader
- Created a responsive UI with **React** and backend APIs with **Django**, utilizing yt-dlp for video management
- Deployed frontend and backend to **AWS**, configuring **S3** for static hosting, **Route 53** for domain management, and **CloudFront** for content distribution
- Deployed backend on **AWS EC2**, using **Nginx** and **Certbot** for TLS, ensuring robust connection security
- Built a desktop application using **Electron**, extending functionality to desktop environments alongside the web version

Splitwise Clone
- Developed a **fullstack** bill-splitting and expense-tracking app utilizing **React**, **Express.js**, and **PostgreSQL**
- Designed a normalized database schema following Boyce-Codd Normal Form (BCNF) principles

Simple Operating System
- Built a **Unix-based operating system** with **C++** from the ground up running on an Intel x86 processor
- Architected a demand-paging virtual memory management system, with **two-level paging** and page fault handling
- Implemented a **file system**, **disk driver**, and kernel-level thread scheduling system

EDUCATION

Texas A&M University College Station, TX
Master of Computer Science, GPA: 3.8/4.0 Aug. 2022 – Dec. 2024
- Coursework: Analysis of Algorithms, Operating Systems, Database Systems, Software Engineering, Network Security

National Taiwan University Taipei, Taiwan
Bachelor of Business Administration, major in Finance, GPA: 3.6/4.3 Sep. 2014 – June 2018
- Exchange Student Program: National University of Singapore, Shanghai Jiao Tong University

SKILLS

Programming Languages: JavaScript, Python, Java, C++, Bash
Frameworks/Libraries: Express.js, Spring Boot, Django, React, Next.js
Data/Tools: SQL, Electron, Docker, GitLab-CI, AWS, Git, Linux