Hung-Wen (Ted) Chiu

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EDUCATION

Carnegie Mellon University — ***Mountain View, CA***
Master of Science in Software Engineering (GPA: 3.6/4.0) — *Feb. 2021 – May 2022*

National Tsing Hua University — ***Hsinchu, Taiwan***
Master of Science in Communications Engineering (GPA: 4.2/4.3) — *Sep. 2012 – Jul. 2014*

National Sun Yat-sen University — ***Kaohsiung, Taiwan***
Bachelor of Science in Computer Science and Engineering (GPA: 3.6/4.0) — *Sep. 2008 – June 2012*

SKILLS

Programming languages: Python, C/C++, Java, Javascript, Shell Script, MATLAB, HTML, CSS
Technologies: Node.js, Express.js, React.js, Bootstrap, GIT, CircleCI, Material UI, Spring Boot, Design patterns
Database: MySQL, PostgreSQL

EXPERIENCE

MediaTek USA — ***San Diego, CA***
Software Development Intern — *May 2021 – Aug. 2021*
Analyzed performance on computer cache and improved it by using machine learning algorithms

- Utilized **perceptron learning algorithm on cache reuse prediction** and constructed a cache predictor in **Python**, which improved the prediction accuracy in the cache and reduced the cache miss rate.
- Reduced 24% of cache miss rate compared to LRU cache and improved 6% of the cache access performance over LRU cache.

Aslent Technology — ***Tainan, Taiwan***
Software Engineer — *Mar. 2020 – Nov. 2020*
Cooperated with hardware engineers and customers, building software architectures and embedded systems

- Engineered a wafer auto-storage system to arrange the wafer and monitor the status automatically in **Python**, which minimized labor cost by 20% and risks of operation by 30%.
- Built a controller in **C++** integrating different types of readers into one device to reduce hardware cost by 30%.

Taiwan Semiconductor Manufacturing Company (TSMC) — ***Tainan, Taiwan***
Backend Software Engineer — *Sep. 2014 – Sep. 2018*
Constructed and maintained automated production systems

- Built and Boosted backend services on semiconductor process automated systems by using **C++**, which achieved full process automation and conserved labor cost by 10% while improving process yield by 23%.
- Established a report auto-generation system in **Python**, which reduced labor costs by 12%.

ACADEMIC PROJECTS

Social Network Application for wildfire prevention, reaction and rebuilding — *Dec. 2020 – May 2021, CMU*

- Designed a web application in **MVC** architecture by using **JavaScript** to provide the functionalities of locating wildfire places, sending announcements, chatting in private, and creating online activities to share with people.
- Adopted **Bootstrap**, **Ajax** for frontend, the frameworks of **Node.js**, **Express.js** for backend, **RESTful APIs** for bridging frontend and backend, and **Socket.io** for dynamic communication.
- Achieved more than 70% of code coverage by using **Jest** to do unit and integration tests.

Online Book Reader Application — *Feb. 2021 – May 2021, CMU*

- Implemented an online book web application providing users with the services of online book reading, tracking books progress and recommending books to friends by using **JavaScript** and **Java**.
- Practiced web application in **MVC** architecture, using **React** and **Material UI** for frontend, **Spring Boot** for backend, and **Socket.io** for dynamic books progress display.
- Utilized Design patterns (**Singleton, Factory method,** and **Strategy**, etc.) to enhance the reusability and extensibility of the system.