Haley Lai

Software Engineer

haleylai1617@gmail.com (+886)938-722-860 haleylai.com Haley-1617 haley-lai LeetCode

Experience

Software Engineer | TSMC

July 2021 – Present Hsinchu, Taiwan

- Built web crawler, web application, and automated programs to ensure mask data accuracy - reducing 15% mask scrap risk
- Re-engineered customer mask data integrated system – reducing future maintenance time by over 30%
- Worked with the software architecture team to improve new internal IDE - provide feedback, code samples, and documentation

Risk Advisory Intern | Deloitte

Sep 2020 – Mar 2021 Taipei, Taiwan

- Web Scraped news, technologies, and cybersecurity-related information using Python and Selenium
- Made automated tools with Python to manipulate data, such as classifying, analyzing statistically, and consolidating data
- Developed internal tools using React Native and Microsoft Azure
- Assisted the data analytics team to build a NLP model using BERT framework

National Security Intern | Qualcomm Institute, UCSD

Jan 2020 – Mar 2020 La Jolla, CA

- Developed innovative solutions to national security problems
- Worked with U.S. DOD leaders and students from different majors to deliver viable products that match DoD/IC users' needs in an extremely short time
- Interviewed people involved with issues; consolidated and reported their needs to leaders and advisors
- Learned to develop sustainable and repeatable model that can be used to launch other potential technology solutions

Summary

Motivated and results-driven software engineer. Created and filed patent for company's first real-time machine learning anomaly detection mechanism for reticle manufacturing.

Technical Skills

Programming Languages

Python, Java, JavaScript, C++, Oracle PL/SQL

Web/APP Dev

HTML, CSS, JSP, Vue.js, Tailwind, WebLogic, React.js, React Native, Node.js, Express.js

Libraries & Frameworks

TensorFlow, NumPy, Pandas, Matplotlib, Pytest, Scikit-Learn, Jupyter Notebook

Education

University of California San Diego

Sept 2019 – June 2021 La Jolla, CA

Bachelor of Science in Math and Computer Science

Foothill College

Sept 2017 – June 2019 Los Altos Hills, CA

Associate Degree in Math and Computer Science

Activities

- Volunteer to be a member of TSMC's AI core team to tutor math and introduce AI at elementary school
- Attend AI Accelerator seminars lectured by HT Kung and presented the materials to the department

Projects

Multivariate Time Series Anomaly Detection System | Taiwan Semiconductor Manufacturing Co., Ltd.

- Helped company save over $2.4 million/year by reducing mask scrap rate 60% by developing a realtime machine learning anomaly detection system for company's most advanced mask writers using Python
- Continuous identifying opportunities to optimize the system by reducing 80% response time, and decreasing writer's halt times to increase overall mask writing efficiency by 30%
- Patent pending for process I created and coded as part of anomaly detection system
- Built the entire system independently using Python from architecture design, integration, testing, maintenance, monitoring, etc.
- Used Numpy, pandas, Matplotlib, scikit-learn, and TensorFlow to analyze output data from mask writers to design a distance and pattern based detection mechanism with the combination of statistical/data science methods and Machine Learning model

Award

- Won 3rd place in the TSMC Continuous Improvement Team (CIT) contest
- Represented the department to win the annual Golden Trade Secret Award
- Represented the division and won an award in Excellent Proposal Competition