SERAPHINE GOH

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WORK EXPERIENCE

Western Digital - Senior Software Modeling Systems Design Engineer　　　　　July 2020 – Present
Flash Product Engineering – Enterprise SSD – System Architecture
- Optimize performance, power, and latency metrics in enterprise SSD products through **Python** software modeling and batch simulations on **AWS cloud compute (EC2) and storage (S3)**
- Process and visualize metric data with data processing tools such as **Jupyter**, **pandas**, **seaborn**, **matplotlib**, and **NumPy** to communicate recommended firmware implementations to cross-functional teams
- Build features into model and conduct studies to identify SSD product enhancements, **reducing read/write latency by over 44%** and **boosting performance by 54% for random workloads and 12.5% for sequential workloads**
- Improve modeling fidelity and create internal tools to increase data processing efficiency
- Update and maintain portfolio of cross-platform tools used to parse firmware telemetry data into **SQLite database**, output summary statistics, and generate interactive visualizations for data analysis
- Contribute to codebase with **CI/CD practices** using git, Jenkins, BitBucket, and Artifactory

Western Digital - Systems Design Engineering Intern　　　　　June 2019 – Sept 2019
- Conducted an end-to-end investigation on decreasing workload latency spikes caused by DRAM congestion exhibited in enterprise SSDs
- **Reduced congestion by 88.7%** by implementing a write-transaction rate limiter in the in-house Python model for SSD performance

PROJECTS

Osusume: A Recommendation Forum | *React (JavaScript), Flask (Python), SQLite*
- Full-stack web application where users can poll the community and discuss recommendations for various subjects, such as movies, restaurants, and career advice
- Implements features such as authentication, commenting, voting, category tagging, and pagination
- Repo: *https://github.com/sgoh25/osusume*

Improper Gait Detection | *C, Fast Artificial Neural Network, BeagleBone (Single-Board Computer)*
- A wearable device for patient rehabilitation that conducts gait analysis and detects walking abnormalities
- Implements a neural network classifier trained on positional data from IoT wearable sensors
- Achieved a **classification accuracy of 80%**, with 20% false positives and 0% false negatives

EDUCATION

University of California, Los Angeles
M.S in Electrical and Computer Engineering (GPA: 3.6/4.0)　　　　　Sept 2018 – June 2020
B.S in Electrical Engineering; Honors: *cum laude* (GPA: 3.7/4.0)　　　　　Sept 2014 – June 2018

- **Computer Science & Statistics:** Machine Learning, Linear Algebra, Probability & Statistics, Neural Signal Processing, Applied Numerical Computing
- **Systems:** Computer Organization, Systems Design, Embedded Systems, Security for Embedded Systems
- **Circuits:** Circuits Laboratory I/II, Circuits Theory I/II, Digital Electronic Circuits, Logic Design of Digital Systems, Advanced Digital Integrated Circuits, Design of VLSI Circuits and Systems, Analog Electronic Circuits
- **Management:** Finance and Marketing for Engineers, Entrepreneurship for Engineers, Business Law

SKILLS

Programming Languages: Python, SQL, JavaScript, Ruby, C/C++, Java, bash
Technologies: React, Flask, SQLite, Ruby on Rails, Jupyter Notebook, pandas, seaborn, matplotlib, NumPy
Development Tools: git, AWS (S3/EC2), Firebase (NoSQL Database/Cloud Storage), Jenkins, Github/BitBucket/Gerrit, Artifactory
Other: full-stack web development, CI/CD, scripting, data analysis/visualization, data science, debugging