Jason Ho

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SUMMARY

Self-motivated student with a background in systems programming in C and Assembly trying to get into chip design learning Verilog. Natural leader with experience spearheading software projects. Passionate about computer architecture, multi-processing, and compiler optimization.

EDUCATION

Brown University **Providence, RI**
Sc.B. Degree in Computer Engineering, GPA: 3.90 *Expected May 2022*

- *Relevant Coursework*: Computer Vision, Data Structures, Computer Systems, Linear Algebra, Digital Logic
- *Current Coursework*: VLSI Design, Linear System Analysis, Digital Electronics Systems Design, Algorithms

EXPERIENCE

Embedded Software Engineering Intern **Providence, RI**
Nabsys *June 2020 - September 2020*

- Developed signal processing algorithms and state machines in Vivado on Xilinx FPGA for analysis of tagged DNA for whole genome sequencing; able to perform real time data processing of hundreds of detectors.
- Optimized FPGA design to significantly reduce slices used, allowing for parallelization of algorithms on FPGA significantly increasing throughput.
- Verified design of FPGA with C++ scripts and python scripting

Security Engineering Intern **Providence, RI**
Brown University CIS *April 2019 - September 2019*

- Designed Copyright Infringement Script that parsed DMCA emails, searched firewall logs and verified infringement on University traffic that saved over 3 hours per case.
- Queried SQL databases to correlate Crowdstrike data with firewall permit-deny traffic in real-time dashboards to display the current state of malicious University traffic flow by optimizing firewall parsing to perform 20 times faster using Regex.

PROJECTS

ARM Fitness Monitor *May 2020*

- Prototyped on a STM32 board where ARM core ran freeRTOS to manage sensor data collection threads as well as threads to compile data with FIFO Queues connecting them.
- Integrated a optical heartrate sensor, an accelerometer, and a gyroscope with the ability to double tap the device to switch between modes using signal processing of the accelerometer.

Nvidia GauGAN Implementation *May 2020*

- Deep learning GANS Model written in Python that uses SPADE normalization, Tensorflow and Keras to produce photorealistic images from segmentation masks.
- Used subset of MIT's ADE20k dataset specifically parsed for outdoor landscape imagery.
- Implementation focuses on reducing computational cost by using only one GPU, with similarly low average FID score of 60.7 on images in the test set.

ReadMe *Jan 2020*

- A multipurpose accessibility android app written in Java that uses augmented reality and Google Cloud's Firebase mlkit to overlay dyslexic friendly font in the camera preview using real time OCR data processing.
- Reads text from the photo gallery, displaying in the same font with foreign language support.
- First Place Google Prize: Best Use of Google Cloud at Hack @ Brown 2020

SKILLS

- **Computer**: Verilog, Python, Java, C, C++, SQL, x86 Assembly, ARM Assembly, Scheme
- **Tools**: GIT, Linux (Debian), Xilinx Vivado Toolchain, Solidworks, Matlab, Spice