Spencer Hance

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Available to start January 2019

Education

Northeastern University **Boston, MA**

Bachelor of Science, ***Computer Engineering*** *December 2018*

- IEEE Student Chapter (**Treasurer Fall'16, Fall'17**)
- Beta Gamma Epsilon Engineering Fraternity (**Vice President Fall'17**)

Relevant Coursework

- High Performance Computing (**C, PThreads, OpenMP, OpenMPI, CUDA**), Software Security, Networks, Computer Systems (**C, x86**), Algorithms (**C++**), Digital Logic Design (**Verilog, FPGA, MIPS**), Embedded Design (**C, FPGA**)

Work Experience

edX **Cambridge, MA**

Software Engineering Intern *May – August 2018*

- Developed open-source microservice for 8+ million students to view and send a transcript **(Python, Django, React)**
- Created hackathon project which predicted arrival times from a flaky company lunch service **(Python, JS)**

MIT Lincoln Laboratory **Cambridge, MA**

Technical Assistant - Machine Learning *October 2017 – May 2018*

- Integrated graph-based machine learning pipeline into meta-learning framework **(Python, Anaconda, SLURM)**

Advanced Micro Devices (AMD) **Boxborough, MA**

Software Engineering Co-op - Research *January – April 2018*

- Developed instrumentation and trace-driven tools **(C++)** to research data prefetching of HPC/Exascale workloads
- Created **IPython** notebooks for analysis and visualization of results from thousands of traces

Advanced Micro Devices (AMD) **Boxborough, MA**

Software Engineering Co-op - Research *January – July 2017*

- Researched new GPU compressed cache designs and presented work at internal innovation expo
- Co-developed cache simulator (**C++**) and decreased simulator runtime by 300%
- Designed simulation framework (**Bash, Python**) to run and analyze large-scale experiments on LSF cluster

EnerNOC **Boston, MA**

Software Engineering Co-op *January – December 2016*

- Created automated tests to measure web-application performance **(JMeter, LoadRunner, Jenkins, AWS)**
- Ported a proprietary algorithm at company hackathon to **Python/OpenCL** and gained a 7x speedup
- Wrote a **MEAN.js** full-stack application to generate and load test data from a Hadoop cluster

Research Experience

NU Computer Architecture Research Group **Boston, MA**

Undergraduate Researcher *October 2014 – Present*

- Wrote cache coherency model for **open-source** Multi2Sim CPU-GPU simulator for **C** to **C++** rewrite
- Designed a tool **(Bash, Python, SQLite3)** to run many parallel fault-injection simulations on a SLURM cluster

International Supercomputing Competitions (SC'15, SC'16, ISC'17, SC'17) **Boston, MA**

Application Lead *July 2015 – November 2017*

- Designed/built four clusters and optimized scientific applications for them
- Achieved the competition record of the HPCG benchmark at ISC'17 in Frankfurt, Germany

Technical Skills

Languages: Python, C(++), Bash, Javascript

Technologies: Linux, OSX, HPC Concepts, LaTeX, Git, Perforce, GDB, LSF, Splunk