Spencer Hance

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Availability: January-July 2018

Education

Northeastern University — **Boston, MA**
Bachelor of Science, ***Computer Engineering*** — *December 2018*

- IEEE (**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

MIT Lincoln Laboratory — **Cambridge, MA**
Technical Assistant - Machine Learning — *October 2017 – Present*

- Developing Machine Learning pipelines for varied datasets (**Python, TensorFlow**)
- Creating a meta learning system to automatically select models

Advanced Micro Devices (AMD) — **Boxborough, MA**
GPU Architecture Co-op — *January – July 2017*

- Researched new GPU compressed cache designs and presented at internal innovation expo
- Contributed to cache simulator (**C++**) and gained 3x speedup on runtime
- Designed simulation framework (**Bash, Python**) to run and analyze large-scale experiments on LSF cluster
- Implemented unit testing framework and increased code coverage

EnerNOC — **Boston, MA**
Performance Engineering Co-op — *January – December 2016*

- Created automated tests to measure web-application performance using JMeter and LoadRunner
- Ported a core algorithm to **Python/OpenCL** and gained a 7x speedup
- Developed a **MEAN.js** application to generate and load test data from Hadoop cluster
- Implemented status pages to monitor production services

Research Experience

International Supercomputing Competitions (SC'15, SC'16, ISC'17, SC'17) — **Boston, MA**
Student Competitor — *July 2015 – Present*

- Broke the competition record of the HPCG benchmark at ISC'17 in Frankfurt, Germany
- Won the "MacGyver Award" for sourcing and building a HPC cluster in 6 hours at SC'16
- Evaluated performance of scientific applications and optimized them for the system

NU Computer Architecture Research Group — **Boston, MA**
Undergraduate Researcher — *October 2014 – Present*

- Ported over 15,000 lines of **C** to **C++** for Multi2Sim heterogeneous system simulator
- Developed unit tests with Google Test for automated code validation
- Developed a bash tool to run massive GPU fault injection simulations for reliability studies
- Utilized **Python** and SQLite3 to analyze simulation results

Technical Skills

Languages: Python (Pandas, NumPy, Matplotlib), C(++), Bash, Verilog, JavaScript (MEAN.js)

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