

Education and Activities

The College of William & Mary Williamsburg, VA Aug 2011 – May 2015

- B.S., Computer Science, GPA: 3.75
- Phi Mu Epsilon Math Honors Fraternity

Relevant Experience

Lawrence Livermore National Lab Livermore, CA Jul 2015 – Present
Position: Computer Scientist

- Owner, Opacity Physics Library, used by Kull and Ares multi-physics codes
- Owner, Particle Tracking Library, intended for use by “Next-Gen” physics codes
- Developer, Mercury, MPI + OpenMP rad transport physics, additions include
 - Scalable Checkpoint Restart (SCR) library, yielding 1000x speedup of checkpoints/restarts using node-local storage, like RAM disks and SSDs
 - Silo I/O improvements to reduce checkpoint size from $O(4000n)$ to $O(8n)$

W&M High Performance Computing Williamsburg, VA Feb 2012 – May 2015
Position: Undergraduate Assistant to High Performance Computing

- Used MPI to write a novel parallel I/O performance benchmark
- Performed STREAM memory benchmarking, code timing, and cycle counting
- HPC application support, including GIS data vis. and performance refactoring
- Assembly/maintenance of diverse CPU + GPU distributed-memory compute clusters, totaling 900+ cores and 21 TFLOP/s theoretical peak performance

NASA Ames Research Center Moffett Field, CA May 2013 – Aug 2013
Position: Supercomputing Research Intern

- Investigation of performance scaling in four generations of Intel Xeon processors running the NASA Parallel Benchmarks on top-20 supercomputer Pleiades
- Novel research of MPI communication traffic across Pleiades interconnect

Presentations

- Pozulp, M. 2014. Creating a Framework for Systematic Benchmarking of High Performance Computing Systems. *Student Poster Session, SC14*.

Honors and Awards

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| • NASA Ames Poster Contest, 1 st Place | Aug 2013 |
| • Stanford CS148 Raytracing Project, 2 nd Place | Dec 2015 |
| • Virginia Space Grant Consortium Grant Recipient (\$6750) | Jun 2013 |
| • W&M Small Hall Makerspace Grant Recipient (\$700) | May 2014 |
| • ACM Student Research Competition Travel Award (\$500) | Sep 2014 |

Skills and Proficiencies

- MPI, OpenMP, CUDA, OpenGL, C/C++, Java, Python, R, shell
- Silo, HDF5, Matplotlib, Scalable Checkpoint Restart (SCR)
- Linux, OS X, Windows, Solaris, Android, Web
- Object-Oriented Programming, Systems Programming, Software Engineering, Scripting, Scientific Data Visualization, Graphics, Technical Writing and Speaking