Benjamin Johnson

CONTACT

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EDUCATION

Harvey Mudd College, Claremont, California — **Expected Graduation: May 2016**
Physics Major

SELECTED COURSEWORK

Computational Biology	Discrete Mathematics	Theoretical Mechanics
Computer Systems	Real Analysis	Quantum Information
Adv. Topics in Algorithms	Partial Diff. Equations	Comp. Methods in Physics

SOFTWARE

Proficient: LaTeX, Python, C/C++, *Mathematica*.
Familiar: Git, *nix Shell Scripting, Java, Igor Pro, Matlab, Html.

WORK

Software Engineering Intern — **May 2014 – August 2014**
Google, Mountain View, California
Worked on the web rendering pipeline within the Knowledge: Search Infrastructure group.
- Wrote the foundation of a new load-management framework for all back-end web rendering.

Computer Science Grader and Tutor — **September 2012 – December 2013**
Harvey Mudd College, Claremont, California

Technical Intern, Level 3 — **May 2013 – August 2013**
Pacific Northwest National Laboratory, Richland, Washington
Worked on social media analytics and algorithm development in the Knowledge Discovery and Informatics group (kdi.pnnl.gov). Sponsored by the National Security Internship Program (science-ed.pnnl.gov/nsip).
- Rebuilt corrupt 12 TiB document index from 83 TiB raw data store.
- Developed flexible load balancer for social media search framework running on a Slurm cluster.

Student Researcher — **June 2012 – July 2012**
Harvey Mudd College, Claremont, California
Worked independently to set up and operate a real-time system for monitoring local atmospheric levels of light-absorbing, water-soluble organic aerosol. For more information on the Hawkins Lab: hmc.edu/hawkinslab.

PROJECTS

Mathematics Clinic — **August 2015 – Present**
Harvey Mudd College / HRL Laboratories
Year-long senior capstone sponsored by HRL Laboratories. "Analysis of Quantum Communication Network Protocols for a Distributed Randomness Beacon". Team tasks:
- Specify distributed randomness beacons of interest, then characterize resilience to noise and malicious nodes within the network.
- Exhaustively simulate smaller beacons with a mix of Python and C++.
- Analyze beacons by hand to identify scale-invariant properties.

Server Administration — **May 2012 – Present**
Claremont, California
Independent project providing general-purpose shared storage for the school community as well as local mirrors of external resources. Took over from a graduating senior.
- Reconfigured Arch Linux installation to utilize recent system improvements like systemd.
- Extended available storage space from 9 TiB to 36 TiB.
- Added mirrors of open source project repositories including Arch Linux, Ctan, Gnu, Apache, English Wikipedia, and Wikileaks.