Résumé

Jason B. Hill

jason@jasonbhill.com | www.jasonbhill.com | github.com/hilljb | 802-233-6490

Technical Skills

Languages/Libraries/APIs: C/C++, Python, Cython, Bash, R, OpenMP, MPI, Boost, udev/sysfs, SCSI Generic, pandas

OS: Enterprise: SLES, RHEL, CentOS Personal: OpenSUSE, Debian, Ubuntu Devel: VirtualBox, Kiwi, OBS, APT

High Performance Technical Computing (HPTC): Experience coding for up to 405,504-core distributed CPU/GPGPU systems, 4,096-core shared-memory single-image Linux systems, fixed-topology supercomputers, multi-controller HA RAID/MAID/JBOD SCSI-target devices, Amazon EC2, and commodity workstations.

Work Experience

SGI (Silicon Graphics International) June 2013–present Longmont, CO

Modular Infinite Storage – Data Path Team

- Led development of SCSI Enclosure Services (SES) backend [C/Cython] and frontend [Python] environmental monitoring utilities for the Modular Infinite Storage scale-out storage and compute platform.
- Wrote Massive Array Idle Disk (MAID) drive power [C] and udev/sysfs hardware utility [C++/Cython] libraries for the Infinite Storage Gateway platform.
- In charge of data path related system event logging for notification and system management. Wrote syslog event service [C++/Boost] and led event definition and cataloging management.
- Various: researched random IO cache algorithms for SSD/NVDIMM cache, automated target iSCSI port and Infiniband setup in OpenSUSE/SLES, tested Linux-HA solutions (e.g., Datera/RTSos, SLES HA, Pacemaker/Corosync).

University of Colorado Boulder 2006–2013 Boulder, CO

Graduate Student / Doctoral Candidate / Instructor of Mathematics

- Computational/algorithms research talks: 2 talks at international conferences, 2 invited talks at research institutions, 1 talk at Rocky Mountain Section Meeting of Mathematical Association of America, 29 seminar presentations at CU-Boulder and nearby universities, 7 hour-long guest lectures in CSCI6454 (graduate advanced algorithms).
- Instructor of record for 14 undergraduate courses (multivariable calculus, integral calculus, differential calculus, precalculus, college algebra, mathematics for the environment, finite mathematics, spirit and uses of mathematics).
- Instructor of record for 2 graduate courses (math teacher training, math teacher training seminar).
- Root administrator of sage.colorado.edu, a Sage Notebook server for the University of Colorado community.

Education

Ph.D. Mathematics (ABD) – computational group & graph theory University of Colorado Boulder
Working under Keith Kearnes and Alexander Hulpke to develop and implement parallel partition backtrack algorithms for graph isomorphism generalizations on large degree permutation representations.

M.A. Mathematics (2010) – computational group theory, representation theory University of Colorado Boulder

M.S. Mathematics (2006) – computational number theory University of Vermont
Developed and implemented an algorithm to locate an instance of the smallest absolute value discriminant totally real number field of prime degree satisfying a given property. Used this algorithm to discover the first known totally real quintic number field having minimal signature group rank.

B.S. Mathematics (2004) University of Michigan-Flint

Personal Projects

- TweetWatch (github.com/hilljb/tweetwatch) – A Python module allowing one to (1) connect to and (2) parse retrieved data from Twitter's streaming API. Development and testing in collaboration with Room 214. Licensed under the LGPL.
- Sage (www.sagemath.org) – Permutation group code development, GAP integration, notebook development and deployment (2010–present). Sage is a free open-source mathematics software system licensed under the GPL.

Publications

- Ó Catháin, Padraig, and Hill, Jason B., "On the Classification of Hadamard Matrices of Order 4p", In preparation.
- Hill, Jason B., *On Finding Totally Real Quintic Number Fields of Minimal Signature Group Rank*, MS Thesis, University of Vermont, Burlington, 2006. Print.
- Hill, Jason B., "Salvaging *La Géométrie*", *Meteorite*, Volume 4 (2004) 17–32. Print.

Workshops

- OpenACC GPU Programming Workshop (October, 2012) – Pittsburgh Supercomputing Center
- Sage Education Days 3 (June, 2011) – University of Washington
- Sage Notebook Days 31 (June, 2011) – University of Washington
- Sage Combinat Days 20.5 (May, 2010) – Fields Institute, Toronto, Canada