

c. chris erway

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Education

Brown University 2004-Present Providence, RI
Ph.D. student in Computer Science. GPA: 4.0. Expected Sc.M. in May 2006.
Currently pursuing research in networking and systems with Prof. John Jannotti.
Teaching assistant for Fall 2005 systems programming course, "Building High-Performance Servers."

Cornell University 1998-2002 Ithaca, NY
B.A. in Computer Science, Music. GPA: 3.44.
Fall 2001 semester spent abroad at the School of Oriental and African Studies (SOAS), London.

Professional Experience

IBM T.J. Watson Research Center 2002-2004 Yorktown Heights, NY
system software engineer, Blue Gene project
Research and development for the BlueGene/L 65,535-node supercomputer. Worked on original port of Linux kernel, device driver support for BG/L's custom network hardware, and dual-core support. Also focused on MPI communication optimizations, especially on tree-based broadcast and reduction.

IBM "Extreme Blue" Internship Program Summer 2001 Cambridge, MA
research intern, Blue Gene project
Design and implementation of a parallel file I/O system for the BlueGene/C ("Cyclops") research architecture, with an API based on a subset of MPI-IO. Work spanned kernel changes, new library, new parallel file server.

OnShare, LLC Spring 2000 Ithaca, NY
contractor
Created a Linux-based Internet file-sharing daemon, using specifications (HTTP- and UDP-based protocol) provided by the client, a now-defunct startup looking for a Linux version of their Windows P2P software. Was lead developer of three-person team from start to final binary delivery, three months later.

VMware, Inc. Summer 1999 Palo Alto, CA
software development intern
Focused primarily on networking challenges presented by running multiple virtual machines connected to a virtual Ethernet network. Developed changes to the Linux product's virtual networking kernel module and DHCP daemon, and also ported those changes to the Windows product.

Publications

- "Optimization of MPI Collective Communication on BlueGene/L Systems." G. Almási, C. J. Archer, C. C. Erway, P. Heidelberger, X. Martorell, J. E. Moreira, B. Steinmacher-Burow, Y. Zheng. *ACM International Conference on Supercomputing (ICS05)*, 2005.
- "An Overview of the Blue Gene/L System Software Organization" (distinguished paper award). G. Almási, R. Bellofatto, J. Brunheroto, C. Cascaval, J. G. Castañós, L. Ceze, P. Crumley, C. C. Erway, J. Gagliano, D. Lieber, X. Martorell, J. E. Moreira, A. Sanomiya, K. Strauss. *Euro-Par*, 2003.
- "System Management in the BlueGene/L Supercomputer." G. Almasi et al. *IEEE International Parallel & Distributed Processing Symposium (IPDPS)*, 2003.
- "An overview of the BlueGene/L Supercomputer." G. Almasi et al. *IEEE/ACM Supercomputing (SC2002)*.

Skills, awards, activities

Software engineering

Very comfortable with C and C++ in the UNIX/Linux environment. Experience with developing event-driven servers; writing Linux kernel modules; parallel programming with MPI; using sockets; optimizing performance-critical code with inline PPC assembly; performance/bottleneck profiling. Also a happy Python user for prototyping ideas quickly, scripting, and controlling apps (SWIG). Experienced with Java.

Other skills and activities

- Mandarin Chinese, four years study. Spring 2003 spent studying at the Chinese University of Hong Kong.
- Founder, Hapa Student Association, Cornell's first mixed-race student organization, 2001. Coordinated and hosted the "Sixth Annual Pan-Collegiate Conference on the Mixed-Race Experience," 2002.
- Musical interests: music theory, jazz and improvisation, ethnomusicology, orchestration, composition.