

E. Jason Riedy

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- Interests** **Scientific computing:** combinatorics, linear algebra, data analysis, and language support. **Parallel computing:** language support, system architecture, and administration. **Floating-point arithmetic:** implementation and language interactions.
- Education** UNIVERSITY OF CALIFORNIA, BERKELEY Ph.D. candidate, expected 2009, 3.8 GPA.
in Computer Science, major studies in scientific computing. Thesis: *Making Static Pivoting Scalable and Dependable*.
UNIVERSITY OF FLORIDA B.S., 1995, 3.8 GPA.
with Honors in Computer Science and Mathematics with a strong physics background.
- Experience** ADJUNCT FACULTY IN MATHEMATICS AT VIRGINIA INTERMONT COLLEGE FALL 2008
Teaching Concepts of Modern Mathematics I and Discrete Mathematics I.
- RESEARCH ASSISTANT TO DR. JAMES DEMMEL AUGUST 1999 – PRESENT
Scaling direct methods for solving large, sparse systems of equations to both massive systems and massively parallel computers. Extra-precise iterative refinement for accurate solutions. Parallel combinatorial computing, linear algebra, numerical analysis, parallel optimization.
- IEEE-754 REVISION COMMITTEE 2001 – 2005
Programming language interactions, exceptional behavior, decimal formats and arithmetic.
- RESEARCH ASSISTANT TO DR. TIM DAVIS JANUARY 1996 – AUGUST 1999
Graph partitioning and ordering for sparse factorization.
- RESEARCH ASSISTANT TO DR. JOE WILSON JANUARY 1996 – AUGUST 1999
Cost models for Image Algebra evaluation on parallel computing arrays.
- ASSISTANT SYSADMIN FOR JIM HRANICKY 1994 – 1999
- Skill Keywords** Languages/libraries: C, Fortran, C++, Perl, Python, Lisp, R, Octave, MatlabTM, UPC, SQL, LAPACK. Parallel styles/APIs: MPI, OpenMP, pthreads, shmem, UPC/PGAS, LAPI, ScaLAPACK/BLACS. Tools: autoconf, automake, cmake, Bourne shell, bash, SQLite, Emacs, rdfproc. Platforms: Debian and Fedora GNU/Linux on x86, x86-64; Solaris on x86, UltraSPARC; AIX on Power. Contributions in GNU Octave, GNU Emacs, Linux kernel. I support and contribute to free software. Experience administrating GNU/Linux, Solaris.
- Teaching** Mentor for Intel Undergraduate Research, fall 2006 and spring 2007.
Assistant for Applications of Parallel Computing, spring 2000 and 2004.
- Selected Publications** “Non-Negative Diagonals and High Performance on Low-Profile Matrices from Householder **QR**,” with J. Demmel, Y. Hida, and M. Hoemmen. 2009. *SIAM Journal on Scientific Computing*, (to appear). Also as LAPACK Note 203.
“Benefits of IEEE-754 Features in Modern Symmetric Tridiagonal Eigensolvers,” with O. Marques and C. Vömel. 2006. *SIAM Journal on Scientific Computing*, vol. 28, no. 5. doi: 10.1137/050641624. Also as LAPACK Working Note 172.
“Extra-precise iterative refinement for overdetermined least squares problems,” with J. Demmel, Y. Hida, and X. Li. 2009. *ACM Transactions on Mathematical Software*, vol. 35, no. 4. doi: 10.1145/1462173.1462177. Also as LAPACK Working Note 188.
“Error Bounds from Extra Precise Iterative Refinement,” with J. Demmel, Y. Hida, W. Kahan, X. Li, and S. Mukherjee. 2006. *ACM Transactions on Mathematical Software*, vol. 32, no. 2. doi: 10.1145/1141885.1141894. Extended in LAPACK Working Note 165.
“Power and Control in Networked Sensors,” with R. Szwedczyk. 2000. Unpublished but cited.
“Microbenchmarking the Tera MTA,” with R. Vuduc. 1999. Unpublished but cited.
“An Image Algebra Based SIMD Image Processing Environment,” with J. Wilson, H. Shi, and G. Ritter. 1999. In *Visual Communication and Image Processing*, ed. C. Chen and Y. Zhang, Marcel Dekker, New York.
- Conference Presentations** Bay Area Scientific Computing Day 2002, 2006, 2007 (posters). SIAM Computational Science and Engineering 2003, 2005. Robert C. Thompson Matrix Meeting 2005. IEEE ARITH 17 2005 (panel). SIAM Parallel Processing 2004. SIAM Combinatorial Scientific Computing 2004. SIAM Annual Meeting 2003.
- Activities and Memberships** IEEE754 REVISION COMMITTEE: Active participant (2001-2005); administer web page (2001-Present)
REFeree/TECHNICAL REVIEWER for ACM Trans. on Math. Soft., IEEE Arith 16 and 17, IEEE Int’l Parallel & Distributed Processing Symposium 2004, Computers and Mathematics with Applications, O’Reilly.
ASSOCIATION FOR COMPUTING MACHINERY (1992-Present)
SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS (2000-Present)