

## Jeffrey S. Chase

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### Research Interests.

Efficient and reliable sharing of information and resources in computer networks ranging from clusters to the global Internet. Recent research focuses on automated dynamic resource management for on-demand computing and storage utilities. Chase has published over 80 technical papers in refereed conferences and journals on topics including cloud hosting platforms, trust management, scalable/elastic network services, network storage, utility/grid computing, end-system networking, and data-intensive computing.

### Professional Preparation.

1985 B.A. (*cum laude*), double major: Mathematics and Computer Science, Dartmouth College  
1989 M.S., Computer Science, University of Washington (Seattle)  
1995 Ph.D., Computer Science, University of Washington (Seattle)

### Appointments.

2006-present Full Professor in Computer Science, Duke University  
2011 Visiting Scholar, Renaissance Computing Institute (RENCI)  
2003-04 Faculty Scholar, HP Laboratories  
2002-06 Associate Professor with tenure, Duke University  
1995-2002 Assistant Professor, Duke University  
1985-94 Senior Software Engineer, Digital Equipment Corp.

### Five Most Closely Related Products.

- I. Baldine, Y. Xin, A. Mandal, P. Ruth, C. Heerman, and J. Chase. **ExoGENI: A Multi-Domain Infrastructure-as-a-Service Testbed.** In *TridentCom, Proceedings*, June 2012.
- Y. Fu, J. Chase, B. Chun, S. Schwab, and A. Vahdat. **SHARP: An Architecture for Secure Resource Peering.** In *19th ACM Symposium on Operating Systems Principles (SOSP)*, October 2003.
- L. Ramakrishnan, L. Grit, A. Iamnitchi, D. Irwin, A. Yumerefendi, J. Chase. **Grid Hosting with Adaptive Resource Control.** In *Supercomputing*, November 2006.
- D. Irwin, J. Chase, L. Grit, A. Yumerefendi, D. Becker, K. Yocum. **Sharing Networked Resources with Brokered Leases.** In *USENIX Technical Conference*, June 2006.
- P. Shivam, S. Babu, J. Chase. **Active and Accelerated Learning of Cost Models for Optimizing Scientific Applications.** In *International Conference on Very Large Data Bases (VLDB)*, September 2006.

### Five Other Significant Products.

- J. Chase, D. Anderson, P. Thakar, A. Vahdat, and R. Doyle. **Managing Energy and Server Resources in Hosting Centers.** In the *18th ACM Symposium on Operating System Principles (SOSP)*, October 2001. (1000+ citations on Google Scholar)
- Cohen, M. Goldszmidt, T. Kelly, J. Symons, and J. Chase. **Correlating Instrumentation Data to System States: A Building Block for Automated Diagnosis and Control.** In the *Sixth Symposium on Operating System Design and Implementation (OSDI)*, December 2004.
- W. Jin, J. Chase, and J. Kaur. **Interposed Proportional Sharing for a Storage Service Utility.** In the *Joint Conference on Measurement and Modeling of Computer Systems (ACM SIGMETRICS)*, June 2004.
- P. Ranganathan, D. Irwin, J. Chase. **Enclosure-Level Power Management for Dense Blade Servers.** *International Symposium on Computer Architecture (ISCA)*, June 2006.
- Yumerefendi and J. Chase. **Strong Accountability for Network Storage.** *ACM Transactions on Storage (TOS)*, 3(3), October 2007. Special issue: selected papers from the *Sixth USENIX Symposium on File and Storage Technologies (FAST 2007)*.

### **Synergistic Activities.**

- *NSF GENI Leadership:* Global Environment for Network Innovation. Chaired two working groups (2007-2009), voting member of GENI Architecture board (2011-2013). Led GENI/ORCA cluster with I. Baldin at RENCi (2008-2013). Developed ORCA (Open Resource Control Architecture) framework (2004-2008), now deployed in ExoGENI (<http://www.exogeni.net>), one of two GENI “racks” testbeds.
- *Education.* Director of Grad. Studies for Duke Comp Sci (2002-2008). Teaching (grad & undergrad): 30+ courses in operating systems, distributed systems, networking, the Internet and society. U-grad OS course ranked top 5% (2012, 2013) for “intellectual stimulation” among large Duke classes.
- *Technical Leadership at Duke.* Research Computing Advisory Committee Chair (2008-). Work with CIO/VP-IT/OIT and others to plan and deploy Duke University services for cluster computing, storage, and networking, including NSF-funded project for “GENI-enablement” of Duke campus network using Software-Defined Networking.
- *Service to research community.* Chaired technical program committees for ACM Symposium on Cloud Computing (SOCC 2011), International Conf. on Testbeds for Networks (TridentCom 2010), USENIX Technical Conf. (ATC 2006), Supercomputing (2005, OS track), USENIX File and Storage Technologies (FAST 2003), and various workshops including NetEcon (2006) and SysML (2006). Served on committees for major conferences including USENIX/ACM Networked System Design and Implementation (NSDI 2013, 2008, 2004), ACM Symposium on Operating System Principles (SOSP 2009, 1997), ACM SIGMETRICS, NDSS, ICAC, ICDCS, WWW, HPDC, and others.
- *Expert witness* for intellectual property litigation in operating systems, security technologies, scalable storage, Web-based services, content distribution networks. Named inventor on 11 US patents.

### **Awards.**

IBM Faculty Award (8 awards, 2002-2012), NetApp Faculty Fellowship (2010), NSF CAREER (1996), Intel Foundation Fellowship (1993), Digital Equipment Corporation GEEP Fellowship (1987-1989). *Award papers:* USENIX 2002, OSDI 2000, HPDC 2003 (selected as one of “20 best in 20 years” in 2012); Supercomputing 2012 award paper nominee. CENIC Innovations in Networking Award, with Project ADAMANT collaborators at RENCi and USC/ISI, March 2013.

### **Collaborators & Other Affiliations.**

*Collaborators and Co-Editors:* Jay Aikat, Univ. of North Carolina at Chapel Hill (UNC); Aditya Akella, Univ. of Wisconsin-Madison (UWM); Ilya Baldin, RENCi; Ewa Deelman, Univ. of Southern California, Information Sciences Inst. (USC/ISI); David Dillow, ORNL; Amr El Abbadi, Univ. of California, Santa Barbara (UCSB); Ted Faber, USC/ISI; Dennis Gannon, Univ. of Indiana; Ari Juels, RSA Labs, EMC Corp.; Scott Klasky, ORNL; Anirban Mandal, RENCi; Peng Ning, North Carolina State University (NCSU); Sarp Oral, ORNL; Norbert Podhorszki, ORNL; Lavanya Ramakrishnan, Lawrence Berkeley National Lab.; Mike Reiter, UNC; Tom Ristenpart, UWM; Paul Ruth, RENCi; Steve Schwab, USC/ISI; Vyas Sekar, SUNY Stonybrook; Mike Swift, UWM; Mladen Vouk, NCSU; John Wroclawski, USC/ISI; Rich Wolski, UCSB.

*Graduate Advisors:* Henry M. Levy, Univ. of Washington; Edward D. Lazowska, Univ. of Washington

### **37 Total Graduate Students Advised:**

- 12 former, completed Doctoral students: Darrell Anderson, Google; Geoff Cohen, Ernst and Young; Ron Doyle, IBM; Laura Grit, Amazon; David Irwin, University of Massachusetts Amherst; Wei Jin, Shaw University; Justin Moore, Google; Piyush Shivam, Sun/Oracle; Rajiv Wickremesinghe, Oracle; Ken Yocum, University of California, San Diego; Aydan Yumerefendi, Blue Stripe Software.
- 2 current PhD students: Vamsidhar Thummala; Bing Xie.
- 3 former Postdoctoral students: Stergios Anastasiadis, University Ioannina, Greece; Adriana Iamnitchi, University of South Florida; Wei Jin, University of West Georgia.
- Supervised research theses/projects for 20 graduated Master's students.