Mary G. Baker

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Research Interests

My research interests include distributed systems, networks, mobile systems, and digital preservation.

Education

May 1994	Ph.D., Computer Science, University of California at Berkeley. Minors in Computer Architecture and Italian. Dissertation title: "Fast Crash Recovery in Distributed File Systems." Advisor: John K. Ousterhout.
May 1998	M.S., Computer Science, University of California at Berkeley.
August 1984	A.B., Mathematics, University of California at Berkeley.

Employment

10/2003-current	Senior Research Scientist, HP Labs, Palo Alto.
1994-2003	Assistant Professor, Computer Science and Electrical Engineering Departments, Stanford University.
1-3/1994	Visiting Researcher, University of Bologna, Italy.
1986-1994	Graduate Research Assistant, University of California at Berkeley.
1985-1986	Member of Technical Staff, Research and Development, Cadence Design Systems. (Then called SDA Systems.)
1984-1985	Member of Technical Staff, ASK, CA. (Then called Relational Technology, Inc.)

Technical Consulting and Advisory Board Memberships

2006-2010	Technical Advisory Group, Lockheed-Martin TMOS program (contract to build the next advanced Air Force communications network).
2000-2003	Consultant for PlateSpin: provider of remote monitoring and provisioning equipment.
2000-2002	Founding Technical Advisory Board, NTT DoCoMo USA Research Labs.
2000-2002	Consultant for PRISMedia (became Acirro): content distribution networks and support.
1994-1997	Consultant for Xerox PARC, Computer Systems Laboratory, Palo Alto, CA.

Professional Activities

- Keynote for IEEE MSST 2011: "Preserving Bread Crumbs."
- Keynote for SYSTOR 2010: "Bread Crumbs Don't Last."
- Technical program co-chair for 6th Usenix Conference on File and Storage Technologies (FAST'08).
- 2006 Keynote for UCSC Storage Systems Research Center: "Storing Bits Forever."
- Founding (and current) member, Technical Working Group on Long-term Retention, Storage Networking Industry Association (SNIA).
- Digital Preservation Enterprise Architecture Strategy for the Library of Congress.

- Guest Editor, Hostile Environments issue of IEEE Pervasive Computing, October-December 2010.
- Guest Editor, Emerging Economies issue of IEEE Pervasive Computing, April-June 2006.
- Technical program chair for WMCSA 2004 (now named HotMobile).
- Vice chair of the ACM Special Interest Group on Mobility (Sigmobile) 2001-2005.
- Technical program co-chair for the First ACM/Usenix Conference on Mobile Systems (MobiSys 2003).
- Member, founding (and current) editorial board, IEEE Pervasive Computing Magazine.
- Member, 2010/2011 IEEE Reynold B. Johnson (RBJ) Information Systems Award Committee
- Chair, ACM Award Canvassing Subcommittee, 2005-2006.
- Past editorial board member for ACM/Baltzer journal Wireless Networks (WINET) and the ACM Mobile Computing and Communications Review.
- Program committee member:
  - SYSTOR 2011
  - ACM HotNets 2008
  - Usenix Conference on File and Storage Technologies (FAST'07)
  - Usenix/IEEE Hot Topics in System Dependability (HotDep) 2006, 2008
  - ACM/Usenix MobiSys 2006, 2004
  - WORLDS 2005
  - IEEE/Usenix HotOS 2005, 2001, 1999, 1997
  - International Workshop on Peer-to-Peer Systems (IPTPS 2005)
  - IEEE SECON 2004
  - IEEE Workshop on Mobile Computing Systems and Applications (WMCSA) 2003, 2000, 1999.
  - Usenix Technical Conference, 2002 and Summer 1994
  - ACM/IEEE Mobicom 2001, 2000, 1999. 1998, 1997
  - Usenix Symposium on Internet Technologies and Systems (USITS) 2001, 1997
  - IEEE Symposium on Applications and the Internet (SAINT) 2001
  - ACM Sigops European Workshop, 1998, 1996
  - ACM Sigcomm 1997
  - ACM Conf. on Architectural Support for Prog. Languages & Operating Systems (ASPLOS) 1996
  - ACM Symposium on Operating Systems Principles (SOSP) 1995
  - IEEE International Conference on Distributed Computing Systems 1995
- Invited speaker for many events, including:
  - Yahoo
  - Distinguished Speaker Series, Sonoma State University
  - PARC Colloquim
  - ACM Queue Expert Roundtable on Contemporary Issues in Commercial Computing: Storage
  - Stanford Computer Systems Colloquium
  - Lockheed-Martin/ATC Colloquium
  - Intel Research/CMU MobiFest
  - Stanford University Women in Electrical Engineering Speaker Series
  - U.C. Berkeley EECS Distinguished Lecture Series
  - Panel chair for the 1st IEEE Conference on Sensor and Ad Hoc Communications and Networks
  - CRA-W and Lucent Panel on the Graduate School Process and Experience
  - Nokia R&D
  - Mobicom'99: the Future of Local-Area Wireless Communication Panel
  - 1999 JASON Summer Study (for independent defense advisory panel report)
  - Microsoft West Coast Symposium
  - NSF Wireless and Mobile Communications Workshop
  - 1999 Univ. of Wash./Microsoft Research Summer Institute: Technologies of Invisible Computing
  - SOSP 1995 moderator for panel on network computers
- Information Director, ACM Special Interest Group on Operating Systems, 1996-2000
- Co-coordinator of the Invited Talks track at the 1996 and 1997 Usenix Technical Conferences
- Speaker and co-organizer (with Professors Widom and Cox) for the Stanford Telecommunications Center Workshop on Mobility and Data Management in Wireless Networks, 1996

Awards

- Outstanding Tutorial Speaker Award, Storage Networking Industry Association, 2009
- Stanford Presidential Research Grant for Junior Faculty 1999
- Okawa Foundation Grant, 1997
- Sloan Foundation Research Fellow, 1996
- Stanford University Terman Fellow, 1997-1999
- AT&T/Lucent Technologies Special Purpose Grant, 1996
- National Science Foundation Faculty CAREER Award, 1995-1998
- Robert N. Noyce Family Faculty Scholar, 1994-1996
- Stanford University School of Engineering Reid and Polly Anderson Faculty Scholar, 1993-1994

Patent Filings (at Hewlett-Packard)

- **200903046** Managing Contacts in Conferencing Applications, Collaborative Applications and Social Networks (with Ian N Robinson)
- **200903223** Audiovisual feedback to users of remote conferencing applications (with Dan Gelb and Ramin Samadani)
- **200903237** Automatic detection of bad framing and pose of video conferencing participants (with Ramin Samadani and Dan Gelb)
- **200903246** Intuitive methods for providing privacy and presence information in the proximity of remote telepresence systems such as the ConnectBoard (with Mitchell Trott and Ian N Robinson)
- **200903468** Intelligent layout techniques in telepresence systems to accommodate social, cultural and organizational expectations (with Tom Malzbender)
- **201000098** Intuitive Privacy Control and Presence Indication for a Visual Collaborative System (with Mitchell Trott and Ian N Robinson)
- **201001919** Improving view angle for portable device video conferencing (with Ramin Samadani)
- **201001986** Exploiting mobility of a portable device for improved user experience (with Ramin Samadani and Ian Robinson)
- **201005027** Communicating gaze direction in a videoconferencing system (with Ian Robinson and Ramin Samadani)

Teaching Experience (at Stanford University)

CS 244B: Distributed Systems and CS 244C: Distributed Systems Project (graduate-level courses)
CS 544: Graduate Seminar / Reading Course on Mobile and Wireless Computing
CS 240: Advanced Topics in Operating Systems (a graduate-level course)
CS 99A: the Downside of Computing (a freshman seminar)
CS 444N: Mobile and Wireless Networks and Applications (a graduate-level course)

In addition, I was thesis advisor for seven Stanford Ph.D. students and an academic advisor for over 40 Stanford M.S. students and about 10 Stanford undergraduates. I have been on about 25 thesis defense and reading committees for Ph.D. students in the U.S. and other countries.

Award Papers

Preserving Peer Replicas by Rate-Limited Sampled Voting, *Proceedings of the 19th ACM Symposium on Operating Systems Principles*, NY, October 2003. (with P. Maniatis, M. Roussopoulos, TJ Giuli, D. S. H. Rosenthal and Y. Muliadi)

Evaluation of Scheduling Algorithms in Mobile Ad Hoc Networks. *ACM Mobile Computing and Communications Review (MC2R)*, Volume 6, Number 3, July 2002. [A Best Poster Paper from *MobiHoc 2002*, extended version.] (with B.-G. Chun and D. Jaisinghani)

The Roma Personal Metadata Service. *Proceedings of the IEEE Workshop on Mobile Computing Systems and Applications*, Monterey, California, December 2000. [Extended version appears in *ACM/Kluwer Mobile Networks and Applications (MONET)*, Vol. 7, No. 5, October 2002.] (with E. Swierk, E. Kiciman, and V. Laviano)

Analysis of a Metropolitan-Area Wireless Network. *Proceedings of Mobicom'99*, August 1999. [Extended version appears in *ACM/Baltzer Wireless Networks (WINET),* Vol. 8, No. 2-3, March-May 2002.] (with D. Tang)

Consistent Overhead Byte Stuffing. *Proceedings of the ACM SIGCOMM'97 Conference*, Cannes, France, September 1997. [Extended version appears in *IEEE/ACM Transactions on Networking*, Volume 7, Number 2, April 1999.] (with S. Cheshire)

A Wireless Network in MosquitoNet. *IEEE Micro*, February 1996. [Forwarded from a previous version: "Experiences with a Wireless Network in MosquitoNet." *Proceedings of the IEEE Hot Interconnects Symposium '95*, August 1995.] (with S. Cheshire)

The Recovery Box: Using Fast Recovery to Provide High Availability in the UNIX Environment. *Proceedings of the Summer 1992 USENIX Conference*, San Antonio, TX, June 1992. [Best Student Paper.] (with M. Sullivan)

Other Refereed Publications

Please see my publication list at http://www.hpl.hp.com/personal/Mary_Baker/publications.html