

JASON FLINN

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RESEARCH INTERESTS

Operating systems, distributed systems, file systems, mobile and pervasive computing.

PROFESSIONAL EMPLOYMENT

2002-Present Assistant Professor	University of Michigan, EECS Dept.	Ann Arbor, MI
2001-2002 Post-Doctoral Intern	Intel Research Pittsburgh	Pittsburgh, PA
1999 Summer Intern	Compaq Western Research Lab	Palo Alto, CA
1991-1996 Staff Programmer	IBM	E. Fishkill, NY

EDUCATION

1996-2001 <i>Ph.D. in Computer Science</i> <ul style="list-style-type: none">■ Thesis: “Extending Mobile Computer Battery Life through Energy-Aware Adaptation”■ Advisor: M. Satyanarayanan Committee: Keith Farkas, Todd Mowry, Dan Siewiorek	Carnegie Mellon University	Pittsburgh, PA
1992 - 1996 <i>M.S. in Computer Engineering (earned part-time while working at IBM)</i>	Syracuse University	Syracuse, NY
1987 - 1991 <i>B.S.E. in Computer Science and Engineering</i> <i>B.S. in Economics (specialization in strategic management)</i>	University of Pennsylvania	Philadelphia, PA

AWARDS

- Best paper award, OSDI 2006.
- Morris Wellman Faculty Development Professorship, 2006-present.
- Award paper, SOSP 2005.
- NSF CAREER award: “Building Intuitive Mobile Systems with Self-Tuning Parameter Translation”, 2004.
- Best paper award, MobiSys 2004.
- Intel Foundation Graduate Fellowship, 2000-2001.

FUNDED PROJECTS

- CSR-PDOS: Fast, Consistent Distributed File Systems through Operating System Speculation, PI, NSF 2005-2008.
- CAREER: Building Intuitive Mobile Systems with Self-Tuning Parameter Translation, PI, NSF 2004-2009.
- An Infrastructure for Wide-Area Pervasive Computing, co-PI, NSF 2003-2006.
- Energy-Aware Data Access for Mobile Computing, PI, NSF 2003-2006.
- AutoMedia, co-PI, Ford Motor Corp. 2007-2009.
- Pervasive Media Access with the Blue File System, PI, Intel Corp, 2005-2008.
- Pervasive Computing Research with the Blue File System, PI, Motorola Corp, 2004-2006.
- Equipment support from Intel Corp, 2002.

SERVICE

- Member of Technical Program Committee: USENIX Annual Tech Conf. 2008, HotMobile 2008, MobiSys 2007, HotMobile 2007, FAST 2007, MPAC 2006, USENIX Annual Tech Conf. 2006, WWW 2006, FAST 2005, IWSSPS 2005, OSDI 2004, ICDCS 2004, ICDCS 2003, IEEE PerCom 2003, USENIX Annual Tech. Conf. 2003.
- Member of Editorial Board for Mobile Computing and Communications Review, 2004.
- Demo/Poster Chair, MobiSys 2007; Publicity Chair, SOSP 2007.
- Reviewer for SOSP, OSDI, Mobicom, MobiSys, USENIX Annual Tech. Conf., SIGMETRICS, FAST, ISWC, WMCSA, Ubicomp, HotOS, ACM Trans. Comp. Syst., IEEE Computer, IEEE Trans. Computers, IEEE Trans. Mobile Comp., IEEE Trans. Parallel and Dist. Systems, IEEE Trans. Emb. Comp. Syst., IEEE Pervasive, IEEE Trans. VLSI, IEEE Trans. CAD, ACM Mobile Networks, Pervasive and Mobile Computing.
- Panelist, NSF, 2004 and 2006.

INVITED TALKS AND SEMINARS

- Invited talk, Austin Conference on Energy-Efficient Design (ACEED), Austin, TX, March 2004.
- Invited lecturer, European Summer School on Embedded Systems (ESSES), Vasteras, Sweden, August 2003.

PUBLICATIONS

Journal Publications

Edmund B. Nightingale, Peter M. Chen, and Jason Flinn, "Speculative Execution in a Distributed File System", ACM Transactions on Computer Systems, Vol. 24, No. 4, pp. 361-392, November 2006. (This is a revised version of the SOSP '05 publication listed below).

Manish Anand, Edmund B. Nightingale, and Jason Flinn. "Self-Tuning Power Management for Wireless Networks", Wireless Networks, Vol 11, No. 4, pp. 451-469, July 2005. (This is an extended version of the Mobicom '03 publication listed below).

Jason Flinn and M. Satyanarayanan. "Managing Battery Lifetime with Energy-Aware Adaptation", ACM Transactions on Computer Systems, Vol. 22 No. 2, pp. 137-179, May 2004 (This is an extended version of the SOSP '99 publication listed below).

Paul Mueller, Jan Van der Spiegel, Vincent Agami, David Blackman, Peter Chance, Christopher Donham, Ralph Etienne, Jason Flinn, Jinsoo Kim, Mike Massa, and Supun Samarasekera. "Design and Performance of a Prototype Analog Neural Computer", Neurocomputing, Vol. 4, No. 4, pp. 311-324, 1992.

Refereed Conference and Workshop Papers

Edmund B. Nightingale, Daniel Peak, Peter M. Chen, and Jason Flinn, "Parallelizing Security Checks on Commodity Hardware." To appear in Proceedings of the Thirteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS '08), Seattle, WA, May 2008.

Kaushik Veeraraghavan, Edmund B. Nightingale, Jason Flinn, and Brian D. Noble, "quFiles: a new abstraction for mobile data management." To appear in Proceedings of the Ninth IEEE Workshop on Mobile Computing Systems and Applications (HotMobile), Napa, CA, February 2008.

Ya-Yunn Su, Mona Attariyan, and Jason Flinn, "AutoBash: Improving Configuration Management with Operating System Causality Analysis." To appear in Proceedings of the 21st Symposium on Operating Systems Principles (SOSP), Stevenson, WA, October 2007.

Daniel Peek, Edmund B. Nightingale, Brett D. Higgins, Puspesh Kumar, and Jason Flinn, "Sprockets: Safe Extensions for Distributed File Systems". In *Proceedings of the USENIX Annual Technical Conference*, Santa Clara, CA, pp. 115-128, June 2007.

Kaushik Veeraraghavan, Andrew Myrick, and Jason Flinn, "Cobalt: Separating Content Distribution from Authorization in Distributed File Systems". In *Proceedings of the 5th USENIX Conference on File and Storage Technology (FAST)*, San Jose, CA, pp. 231-244, February 2007.

Edmund B. Nightingale, Kaushik Veeraraghavan, Peter M. Chen, and Jason Flinn, "Rethink the Sync." **Best paper award.** In *Proceedings of the 7th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, Seattle, WA, pp. 1-14, November 2006.

Daniel Peek and Jason Flinn, "EnsembleBlue: Integrating Distributed Storage and Consumer Electronics." In *Proceedings of the 7th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, Seattle, WA, pp. 219-232, November 2006.

Edmund B. Nightingale, Peter M. Chen, and Jason Flinn, "Speculative Execution in a Distributed File System." **Award paper.** In *Proceedings of the 20th Symposium on Operating Systems Principles (SOSP)*, Brighton, England, pp. 191-205, October 2005.

Olga Volgin, Wanda Hung, Chris Vakili, Jason Flinn, and Kang Shin, "Context-Aware Metadata Creation in a Heterogeneous Mobile Environment." In *Proceedings of the 15th ACM International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV)*, Skamania, WA, pp. 75-80, June 2005.

Ya-Yunn Su and Jason Flinn, "Slingshot: Deploying Stateful Services at Wireless Hotspots." In *Proceedings of the 3rd Annual Conference on Mobile Computing Systems, Applications, and Services (MobiSys)*, Seattle, WA, pp. 79-92, June 2005.

Daniel Peek and Jason Flinn. "Drive-Thru: Fast, Accurate Evaluation of Storage Power Management", In *Proceedings of the USENIX Annual Technical Conference*, Anaheim, CA, pp. 251-264, April 2005.

Ya-Yunn Su and Jason Flinn, "Portable Storage Support for Cyber-Foraging." In *Proceedings of the International Workshop on Software Support for Portable Storage*, San Francisco, CA, pp. 62-68, March 2005.

Edmund B. Nightingale and Jason Flinn. "Energy-Efficiency and Storage Flexibility in the Blue File System". In *Proceedings of the 6th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, San Francisco, CA, pp. 363-378, December 2004.

Manish Anand, Edmund B. Nightingale, and Jason Flinn. "Ghosts in the Machine: Better Interfaces for Power Management". **Best Paper Award.** In *Proceedings of the 2nd Annual Conference on Mobile Computing Systems, Applications, and Services (MobiSys)*, Boston, MA, pp. 23-35, June 2004.

Manish Anand, Edmund B. Nightingale, and Jason Flinn. "Self-Tuning Power Management for Wireless Networks". In *Proceedings of the 9th Annual Conference on Mobile Computing and Networking (MOBICOM)*, San Diego, CA, pp. 176-189, September 2003.

Jason Flinn, Shafeeq Sinnamohideen, Niraj Tolia, and M. Satyanarayanan. "Data Staging on Untrusted Surrogates". In *Proceedings of the 2nd USENIX Conference on File and Storage Technology (FAST)*, San Francisco, CA, March/April, pp. 15-28, 2003.

Rajesh Balan, Jason Flinn, M. Satyanarayanan, Shafeeq Sinnamohideen, and Hen-I Yang. In the 10th ACM SIGOPS European Workshop, Saint-Emillion, France, September 2002.

Jason Flinn, SoYoung Park, and M. Satyanarayanan, "Balancing Performance, Energy, and Quality in Pervasive Computing". In *Proceedings of the 22nd International Conference on Distributed Computing Systems*, Vienna, Austria, pp. 217-226, July 2002.

Jason Flinn, Eyal de Lara, M. Satyanarayanan, Dan S. Wallach, and Willy Zwaenepoel. "Reducing the Energy Usage of Office Applications". In *Proceedings of the IFIP/ACM International Conference on Distributed Systems Platforms (Middleware 2001)*, Heidelberg, Germany, pp. 252-272, November 2001.

Jason Flinn, Dushyanth Narayanan, and M. Satyanarayanan. "Self-Tuned Remote Execution for Pervasive Computing". In *Proceedings of the 8th Workshop on Hot Topics on Operating Systems (HotOS-VIII)*, Schloss Elmau, Germany, pp. 61-66, May 2001.

Dushyanth Narayanan, Jason Flinn, and M. Satyanarayanan. "Using History to Improve Mobile Application Adaptation". In *Proceedings of the 3rd IEEE Workshop on Mobile Computing Systems and Applications*, Monterey, CA, pp. 31-40, December 2000.

Keith I. Farkas, Jason Flinn, Godmar Back, Dirk Grunwald, and Jennifer Anderson. "Quantifying the Energy Consumption of a Pocket Computer and a Java Virtual Machine". In *Proceedings of the International Conference on Measurement and Modeling of Computer Systems (ACM SIGMETRICS)*, Santa Clara, CA, pp. 252-263. June 2000.

Jason Flinn and M. Satyanarayanan. “Energy-Aware Adaptation for Mobile Applications”. In *Proceedings of the 17th ACM Symposium on Operating Systems Principles (SOSP)*, Kiawah Island Resort, SC, pp. 48-63, December 1999.

Jason Flinn and M. Satyanarayanan. “PowerScope: A Tool for Profiling the Energy Usage of Mobile Applications”. In *Proceedings of the 2nd IEEE Workshop on Mobile Computing Systems and Applications*, New Orleans, LA, pp. 2-10, February 1999.

Brian D. Noble, M. Satyanarayanan, Dushyanth Narayanan, J. Eric Tilton, Jason Flinn, and Kevin R. Walker. “Agile Application-Aware Adaptation for Mobility”. In *Proceedings of the 16th ACM Symposium on Operating Systems Principles (SOSP)*, Saint-Malo, France, pp. 276-287, October 1997.

Other Publications

Daniel Peek and Jason Flinn, “Distributed Storage Meets Consumer Electronics”, Invisible Computing Column, IEEE Computer, Vol. 40, No. 2, pp. 93-95, February 2007.

Manish Anand and Jason Flinn, “PAN-on-Demand: Building Self-Organizing PANs for Better Power Management”, Technical Report CSE-TR-524-06 EECS Dept., University of Michigan, August 2006.

Jason Flinn, P. T. Kabamba, W.-C. Lin, S. M. Meerkov, and C. Y. Tang. “Collaborative Power Management in WPANs using Rational Controllers: A Case Study”, *Mathematical Problems in Engineering*, Volume 2005, Number 5, pp. 491-501, October 2005.

Jason Flinn, Pierre T. Kabamba, Semyon M. Meerkov, and Choon-Yik Tang. “Power-Improvement Capacity of Computing and Communication Devices”. Technical report CGR-04-01 EECS Dept., University of Michigan, January 2004.

Jason Flinn, Keith I. Farkas, and Jennifer Anderson. “Power and Energy Characterization of the Itsy Pocket Computer (Version 1.5)”. Compaq Western Research Laboratory Technical Note TN-56, February 2000.

M. Satyanarayanan, Jason Flinn, and Kevin R. Walker. “Visual Proxy: Exploiting OS Customizations without Application Source Code”. In *Operating Systems Review*, Volume 33, Number 3, pp. 14-18, July 1999.

In submission

Edmund B. Nightingale, Kaushik Veeraraghavan, Peter M. Chen, and Jason Flinn, “Rethink the Sync.” Submitted to ACM Transactions on Computer Systems (this is an extended version of the OSDI publication above).

Mona Attariyan and Jason Flinn, “Using Causality to Diagnose Configuration Bugs.” Submitted to the USENIX Annual Technical Conference, Boston, MA, June 2008.

RESEARCH ADVISING

Ph.D. students:

- Manish Anand, graduated 2007, now at Nokia Research
- Edmund B. Nightingale, graduated 2007, now at Microsoft Research
- Daniel Peek, current student
- Ya-Yunn Su, current student
- Kaushik Veeraraghavan, current student
- Mona Attariyan, current student
- Brett Higgins, current student, co-advised with Brian Noble