Sami Rollins

Address

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Degrees

Ph.D. in Computer Science, University of California at Santa Barbara	June 2003
Advisor: Kevin Almeroth	
M.S. in Computer Science, University of California at Santa Barbara	June 2000
B.A. in Computer Science, Mills College	May 1998

Professional Experience

Associate Professor – University of San Francisco	Fall 2010 – present
Assistant Professor – University of San Francisco	Fall 2007 – Fall 2010
Assistant Professor (Term) – University of San Francisco	Fall 2006 – Fall 2007
Adjunct Assistant Professor – UMass Amherst	December 2005 – present
Assistant Professor – Mount Holyoke College	July 2003 – June 2007
Research Assistant – UC Santa Barbara	June 2000 – June 2003
Teaching Assistant – UC Santa Barbara	Spring 2000, Fall 2002
Instructor – UC Santa Barbara	Summer 2002
Intern – Hewlett Packard Laboratories	Summer 2001
Intern – IBM Almaden Research Center	Summer 1998, June 1999 – March 2000
Teaching Assistant – Mills College	Fall 1996 – Spring 1998

Research Overview

Renewable Energy-Driven Systems – Act as co-Principal Investigator for a project to develop system support for homes powered by renewable energy sources such as solar.

Mobile Computing – Acted as Principal Investigator for a project to investigate cooperative techniques for management of dynamic data in a personal area network. Implemented a performance measurement tool for mobile devices. Contributed to design of Turducken, a mobile device that combines several mobile computing platforms into a single, power-efficient device. Contributed to the design of Triage, a software architecture to support power-efficient operation of tiered hardware for microservers.

Peer-to-Peer Computing – Designed, implemented, and performed simulated evaluation of power-aware techniques for maintaining data availability in a personal area network. Designed and performed simulated evaluation of a one-to-many data distribution architecture for peer-based networks. Co-authored a frequently-cited survey of the field of peer-to-peer computing.

Internet Technologies – Designed and implemented a system to analyze an XML schema and produce a set of customized application components. Contributed to implementation and evaluation of an algorithm to support eager scheduling of tasks in an Internet-based parallel computing system. Designed and implemented a model for supporting scalable web services and dynamic user interaction using one-to-many data distribution. Redesigned and implemented a transcoding engine that performs document transcoding based on pattern matching rules.

Educational Technology – Designed and deployed a digital classroom to support presentation, remote access, and archival of presentations and content presented. Developed a set of best practices for deploying future digital classroom spaces.

Classes Taught

Network Programming (USF)	Spring 2011
Software Development (USF)	Fall 2009, Fall 2010, Spring 2011
Distributed Software Development (USF)	Spring 2008, Spring 2009, Fall 2009, Fall 2010
Wireless Sensor Networks (USF)	Fall 2008, Spring 2010
Intro to Computer Science II (Java) (USF)	Fall 2006, Spring 2007, Fall 2007
	Fall 2008, Spring 2009, Spring 2010
Internet Systems Research (USF)	Spring 2007
Intro to Computer Science I (Python/Java) - (USF)	Fall 2006, Spring 2007
Master's Project Course (USF)	Fall 2006
Object-Oriented Intermediate Programming (MHC)	Spring 2006
Algorithms (MHC)	Spring 2005, Spring 2006
Data Structures (MHC)	Fall 2004, Spring 2005, Fall 2005
Computer Networking (MHC)	Fall 2005, Fall 2003
Networked Systems and Applications (MHC)	Spring 2004
Problem Solving and Programming in C (MHC)	Spring 2004, Fall 2004
TA: Intro to Computer Networks (UCSB)	Fall 2002
Introduction to Programming in Java (UCSB)	Summer 2002
TA: Programming Methods (UCSB)	Spring 2000
TA: Programming in C++ and Java (Mills College)	Fall 1996 – Spring 1998

Curriculum Development

Proposed course – CS 10X - A course on sustainability and computing for non-majors

New course – CS 686/486 - Wireless Sensor Networks

New course – CS 212 - Software Development

Member – Committee to redesign undergraduate and graduate Computer Science curriculum

Journal and Conference Publications

*S. Rollins, N. Banerjee, and K. Moran[1], "Automating Energy Management in Green Homes", in the *Proceedings fo the ACM SIGCOMM Workshop on Home Networks (HomeNets 11)*, Toronto, Canada, August 2011. (to appear)

*S. Rollins, "Introducing Networking and Distributed Systems Concepts in an Undergraduate-Accessible Wireless Sensor Networks Course", in the *Proceedings of the ACM Technical Symposium on Computer Science Education (SigCSE 2011)*, Dallas, TX, USA, March 2011. (acceptance rate 34%)

*S. Rollins, J. Porten[1], K. Brisbin[1], and C. Chang-Yit[1], "A Battery-aware Algorithm for Supporting Mobile Collaborative Applications", Mobile Networks and Applications, Springer (Online First), December 2010.

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*Published while at USF.
[1] USF student author

[*]S. Rollins and C. Chang-Yit[2], "A Battery-aware Algorithm for Supporting Mobile Collaborative Applications", in the *Proceedings of The 4th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom '08)*, Orlando, FL, November, 2008. (acceptance rate 37%)

[*]N. Banerjee, A. Rahmati, M.D. Corner, S. Rollins, and L. Zhong, "Users and Batteries: Interactions and Adaptive Energy Management in Mobile Systems", in the *Proceedings of the 9th International Conference on Ubiquitous Computing (Ubicomp 07)*, Innsbruck, Austria, September, 2007. (acceptance rate 19%)

[*]N. Banerjee, J. Sorber, M. D. Corner, S. Rollins, and D. Ganesan, "Triage: Balancing Energy Consumption and Quality of Service in a Microserver", in the *Proceedings of The Fifth International ACM/USENIX Conference on Mobile Systems, Applications, and Services (MobiSys '07)*, Puerto Rico, June, 2007. (acceptance rate 21%)

[†]J. Sorber, N. Banerjee, M. Corner, and S. Rollins, "Turducken: Hierarchical Power Management for Mobile Devices", in the *Proceedings of the Third International Conference on Mobile Systems, Applications, and Services (MobiSys 05)*, Seattle, WA, USA, June, 2005. (acceptance rate 24%)

[†]S. Rollins and K. Almeroth, "Evaluating Performance Tradeoffs in a One-to-Many Peer Content Distribution Architecture", Journal of Internet Technology, Volume 5, Number 4, pages 373-387, 2004. [‡]

[†]S. Rollins and K. Almeroth, "Lessons Learned Deploying a Digital Classroom", Journal of Interactive Learning Research, Volume 15, Issue 2, pages 169-185, 2004.[‡]

[†]J. Humfrey, S. Rollins, K. Almeroth, and B. Bimber, "Managing Complexity in a Networked Learning Environment", in the *Proceedings of the World Conference on Educational Multimedia, Hypermedia, and Telecommunications (ED MEDIA 2003)*, Honolulu, HI, June, 2003.[‡]

[†]K. Almeroth, S. Rollins, Z. Shen, and B. Bimber, "Creating a Demarcation Point Between Content Production and Encoding in a Digital Classroom", in the *Proceedings of the World Conference on Educational Multimedia, Hypermedia, and Telecommunications (ED MEDIA 2003)*, Honolulu, HI, June, 2003.[‡]

S. Rollins and K. Almeroth, "Pixie: A Jukebox Architecture to Support Efficient Peer Content Exchange", in *Proceedings of ACM Multimedia*, Juan Les Pins, France, December, 2002. (acceptance rate 14%)

S. Rollins, R. Chalmers, J. Blanquer, and K. Almeroth, "The Active Information System (AIS): A Model for Developing Scalable Web Services", in *Proceedings of Internet and Multimedia Systems and Applications (IMSA 2002)*, Kauai, HI, August 2002.[‡]

S. Rollins and K. Almeroth, "Seminal: Additive Semantic Content for Multimedia Streams", in *Proceedings of Internet and Multimedia Systems and Applications (IMSA 2002)*, Kauai, HI, August 2002.[‡]

S. Rollins and K. Almeroth, "Deploying an Infrastructure for Technologically Enhanced Learning", in *Proceedings of the World Conference on Educational Multimedia, Hypermedia, and Telecommunications (ED MEDIA 2002)*, Denver, Colorado, USA, June 2002.[‡]

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[2]USF student author
[†]Published after PhD.
[‡]Acceptance rate unavailable.

S. Rollins and N. Sundaresan, "A Framework for Creating Customized Multi-Modal Interfaces for XML Documents", in *Proceedings of the IEEE International Conference on Multimedia and Expo (ICME 2000)*, New York City, NY, July 2000.‡

S. Rollins and N. Sundaresan, "AVoN Calling: AXL for Voice-enabled Web Navigation", in *Proceedings of the 9th International World Wide Web Conference (WWW9 2000)*, Amsterdam, Netherlands, May 2000. Also appears in Computer Networks, Volume 33, Issues 1-6, pages 533-551, June 2000. (acceptance rate 19%)

M. Neary, S. Brydon, P. Kmiec, S. Rollins, and P. Cappello, "Javelin++: Scalability Issues in Global Computing", in *Proceedings of the ACM 1999 Java Grande Conference*, pages 171 - 180, San Francisco, California, June 12-14, 1999. Also appears in Concurrency: Practice and Experience, Volume 12, pages 727-753, 2000. (acceptance rate 53%)

Workshop Publications and Presentations

†D. Tilkidjieva[3], N. Banerjee, M. Kazandjieva[2], S. Rollins, and M. Corner, "LLAMA: An Adaptive Strategy for Performing Background Tasks on Mobile Devices", in the *Poster Proceedings of the 7th IEEE Workshop on Mobile Computer Systems and Applications (WMCSA 2006)*, Semiahmoo Resort, WA, USA, April, 2006. ‡

S. Rollins, K. Almeroth, D. Milojičić, and K. Nagaraja, "Power-Aware Data Management for Small Devices", in the *Proceedings of the Workshop on Wireless Mobile Multimedia (WoWMoM 2002)*, Atlanta, GA, USA, September, 2002. (acceptance rate 33%)

S. Rollins and K. Almeroth, "A Model for Distributed Collaboration in a Distance Learning Application", Poster Presentation, *Workshop on Networked Group Communication (NGC 2000)*, Palo Alto, CA, USA, November, 2000.‡

Non-refereed Publications

†K. Nagaraja, S. Rollins, and M. Khambatti, "Looking beyond the Legacy of Napster and Gnutella", IEEE Distributed Systems Online, vol. 7, no. 3, 2006, art. no. 0306-o3005.

D. Milojičić, V. Kalogeraki, R. Lukose, K. Nagaraja, J. Pruyne, B. Richard, S. Rollins, and Z, Xu, "Peer-to-Peer Computing", *HP Labs Technical Report* HPL-2002-57, March, 2002.

Research Funding

N. Banerjee and S. Rollins "CSR:Small:Collaborative Research: System Support for Green Homes", under review, December 2010.

S. Rollins, "Travel to SIGCSE". USF Faculty Development Fund. $1,819, Spring 2011.

S. Rollins, "Using Wireless Sensors to Introduce Programming, Networking, and Distributed Systems Concepts" National Science Foundation (NSF) Course, Curriculum, and Laboratory Improvement (CCLI) proposal, May 2009, declined.

S. Rollins, "RUI/CSR-PDOS:Cooperative Prefetching for Mobile Devices" National Science Foundation (NSF) grant CNS-0509095, $166,882, 6/15/05-5/31/10.

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†Published after PhD.

[3]Mount Holyoke undergraduate author

‡Acceptance rate unavailable.

S. Rollins, "Renewal: A Distributed Web-based Data Repository". USF Faculty Development Fund. $1,800, Spring 2008.

S. Rollins, "A Distributed Web-based Data Repository". USF Faculty Development Fund. $1,800, Fall 2007.

S. Rollins, "Travel to the Grace Hopper Celebration of Women in Computing". USF Faculty Development Fund. $2,058, Fall 2007.

P. Shenoy, M. Corner, J. Kurose, B. Levine, A. Venkataramani, S. Kaplan, S. Rollins"CRI: A Synergistic Testbed for Research on Next-generation Wireless Networking Technologies", August 2005. National Science Foundation (NSF) computing research infrastructure grant, declined.

P. Shenoy, D. Ganesan, M. Corner, S. Rollins, S. Kaplan, "MRI: Acquisition of a Laboratory Testbed for Networked Embedded Systems and Sensor Research", National Science Foundation (NSF) grant CNS-0520729, $300,000, 9/1/05-8/31/08.

S. Rollins, "Cooperative Prefetching for Mobile Devices", Mount Holyoke College Research Assistance Grant, $2,175, 7/1/05-7/1/06.

S. Rollins, "Hierarchical Power Management for Mobile Devices", Mount Holyoke College Faculty Grant, $1,542, April 2005.

E. Berger, M. Corner, S. Rollins, S. Kaplan, J.E. Moss, "CRI: Critical MASS - A Simulation Facility for Systems Research and Education in Western Massachusetts", August 2004. National Science Foundation (NSF) computing research infrastructure grant, declined.

M. Corner, B. Levine, S. Kaplan, S. Rollins, N. Howe, R. Weiss, "Collaborative Research: A Five-College Partnership for Information Assurance Education" National Science Foundation (NSF) grant DUE-0416481, $11,527 (Mt Holyoke award), 9/1/04-8/31/06.

Service to the Department

Graduate Advising Session, Spring 2011.

Webtrack Advising Video, Fall 2010.

Graduate Placement Exam Development, Summer 2010.

New Faculty Mentor, EJ Jung, 2010/2011.

Faculty Search Committee, 2009/2010, hired EJ Jung.

Departmental Retreat and Program Review – Fall 2007–Spring 2008.

Departmental Curriculum Development – Fall 2008.

Research Presentation – CS 110 – Spring 2007.

Research Presentation – CS Research Night – December 2007.

Research Presentation – CS Special Lecture Series – Fall 2006.

Advising of undergraduate and graduate students – ongoing.

Research Students Advised:

- Kevin Moran, Bluetooth Discovery in Android
     Spring 2010
- Colin Bean, Collaborative Computing on Android
     Summer 2009, Co-supervised with Greg Benson
- Kathryn Brisbin, Collaborative Computing on Android and Battery Awareness in P2P Networks
     Summer 2009, Co-supervised with Greg Benson
- Jeremiah Porten, Collaborative Computing on Android and Battery Awareness in P2P Networks
     Summer 2009, Spring 2009, Co-supervised with Greg Benson
- Riku Xie, Collaborative Computing on Android
     Spring 2009, Co-supervised with Greg Benson
- Cheryl Chang-Yit, Analyzing Predictability of Battery Usage
     Spring 2008, Fall 2007, Summer 2007
- Priyanka Daultani, A Tool to Collect Mobile Device Synchronization Information
     Fall 2007
- Serene Chong, Energy-Aware Podcast Download
     Summer 2007

Independent Studies Supervised:

- Kevin Moran, Home Automation iPhone Application, Spring 2011
- Sunli Guo, An Analysis of Battery Usage in Android, Spring 2010
- Frank Itthipalkul, Bluetooth Discovery in Android, Spring 2010
- Haiyan Wu, Mobile Web Caching, Fall 2009.
- Jasper Roel, Kathryn Brisbin, Peter Kuang, Motel: A Platform for Android/iPhone Communication, Fall 2009.
- Jim Cortez, A Web Framework for Android, Summer 2009
- Lili Sun, Wireless Sensor Networks, Summer 2008
- Kai Hu, Improved UI and Security for MAsy, Summer 2008
- Cheryl Chang-Yit and Yang Jiang, MAsy: Mobile Asynchronous File Management, Spring 2008
- Tushar Pednekar, Integrating Google Gears into a Data Management Application, Fall 2007
- Nitin Ramamurthy, Llama: A Data Collection Tool for Laptops, Fall 2006

Service to the College

Admissions Day Representative – Spring 2011.

Founder and Faculty Advisor – Women in CS Group – 2007–present.

Meet the Scientist Video – 2010.

Director – USF Summer Enrichment Program (SEP) for High School Girls – 2010, 2009, 2008, 2007.
    http://www.cs.usfca.edu/˜sep2008/

Western Conversations Participant – Fall 2009.

University Scholars Mentor – Fall 2008–present.

College-wide New Student Orientation Lunch – Summer 2008.

Collaborator – Proposal to Motorola for Funding for Summer Enrichment Program – Fall/Spring 2008.

Research Presentation – Women in Science Dinner – 2008.

Invited Mentor Attendee – 4.0 Dinner – 2007.

Research Presentation – Women in Science Luncheon – Spring 2007.

Attendee – New Faculty Lunches hosted by Michael Bloch – 2006–2008.

Guest Speaker – USF Summer Enrichment Program – Summer 2006.

Service to the University

Member – UITC and Learning Technologies Subcommittee – December 2008–present.

CS Representative – College Council – Fall 2010.

Collaborator – Proposal to NIST for the USF Center for Science and Innovation – 2008.

Collaborator – Luce Fellowship Application – Fall 2008.

Phonathon Participant – Spring 2008.

Participant – ITS Strategy Meetings for Wireless Technologies – Fall 2006.

Service to the Profession

Associate Program Chair – SIGCSE 2012.

Workshop Co-Chair – MobiSys 2011.

Student Travel Committee Member – MobiSys 2011.

Student Travel Grant Co-Chair – MobiCom/MobiHoc 2010.

Fellowship Co-Chair – N2 Women Board – 2010, 2011.

Co-Director – Community for Sensing Systems in Education – 2010–present.

PhD Forum Panelist – MobiSys 2009

"Pitfalls and Possibilities at Teaching-Oriented Schools"
    Presentation given at UCSB, Fall 2008.

"Users and Batteries: Interactions and Adaptive Energy Management in Mobile Systems"
    Presentation given at Sonoma State University, Fall 2008.

Paper Referee – Transactions on Mobile Computing 2009, The Handbook of Computer Networks 2006,
    IEEE Distributed Systems Online 2006, ACM Symposium on Applied Computing -Special Track on
    Computer Networks 2004, Networking 2004, Usenix 2004

Editor – Peer-to-Peer area of IEEE Distributed Systems Online
    http://dsonline.computer.org/
    (Fall 2001 – 2007)

Panelist – National Science Foundation Proposal Review
    Spring 2006, Fall 2005

Contributor – Advice article "Paving the Road to Success"
    http://www.sudocoaching.com/resources.shtml
    2007

Co-Web Chair – IFIP/IEEE International Conference on Management of Multimedia
Networks and Services 2002

Founder and organizer – UCSB quarterly lunch for female graduate students and faculty (Winter, Spring
2002)

Graduate student representative - UCSB Graduate Admissions Committee (2000 - 2001)

Volunteer – Expanding Your Horizons in Science and Math Conference (Spring 1997)

Student experiment volunteer – Workshop on Teaching and Learning Object Design in the First Academic
Year (OOPSLA 1996)

Service to the Community

Organizer – USF Summer Enrichment Program for High School Girls – 2009, 2008, 2007.
http://www.cs.usfca.edu/~sep2008/

Faculty Participant – Peru Immersion – Spring 2007.

Selected Activities and Service – Mount Holyoke College

Independent Study Courses:
Maria Kazandjieva, Energy-Aware Mobile Systems. Spring 2006, Fall 2005, Spring 2005.
Ashley Trimmer, Congestion Control Algorithms for Radar Data. Fall 2005.
Denitsa Tilkidjieva, Mobile Computing.Spring 2005.
Alexandra Nikolova, Computer Security. Spring 2005.
Nerissa Ranjitkar, Mobile Computing. Fall 2004, Spring 2003. Co-supervised with Deborah
Strahman.
Maria Kazandjieva, Computer Security. Fall 2004.
Christina Villaruel, Computer Security Seminar Series. Fall 2004.
Heather Do, Computer Security Seminar Series. Fall 2004.

Summer Students Advised:
Denitsa Tilkidjieva, Predicting wireless network availability for mobile devices. Funded by the
Howard Hughes Medical Institute Summer Research Fellowship (HHMI #52005134). Summer 2005.
Nerissa Ranjitkar, A Mobile Sports News Application. August 2004. Co-supervised with Deborah
Strahman.

Appeals Committee – Fall 2004–Fall 2006

Term Faculty Position Search Committee – 2006

Departmental Self-Study and Review – 2005/2006

Howard Hughes Medical Institute Fellowship Review Committee – 2005

Thesis Committee Member – Desislava Petkova 2005

CS System Administrator Search Committee – 2005

Honors and Awards

Best Student Paper Finalist – ACM Multimedia 2002

Outstanding Paper Award – ED MEDIA World Conference on Educational
     Multimedia, Hypermedia, and Telecommunications 2002

Doctoral Scholars Fellowship – UC Santa Barbara
     (Fall 1998 – Spring 2002)

Member – Phi Beta Kappa

Arthur Vining Davis Scholarship – Mills College
     (Fall 1995 - Spring 1998)