Aaron Schulman

Email: schulman@cs.umd.edu	3122 A.V. Williams Bldg.
Phone: (410) 533-4221	University of Maryland
Web: http://www.cs.umd.edu/~schulman	College Park, MD 20742 USA

Research Interests

Networking, wireless networks, visualization of network measurements, and incentives.

Education

University of Maryland, College Park

- Ph.D, Department of Computer Science
  Started Fall 2007, expected graduation Summer 2012.
  Advisor: Neil Spring
- M.S. Computer Science, May 2010
- B.S. Computer Science, May 2007. Minor: Philosophy

Conference Publications

Bartendr: A Practical Approach to Energy-aware Cellular Data Scheduling
Aaron Schulman, Neil Spring, Vishnu Navda, Ramachandran Ramjee,
Pralhad Deshpande, Calvin Grunewald, Venkata N. Padmanabhan, Kamal Jain
To appear at MobiCom 2010 (Conference on Mobile Computing and Networking) 14% Acceptance

Maranello: Practical Partial Packet Recovery for 802.11
Bo Han, *Aaron Schulman*, Neil Spring, Bobby Bhattacharjee,
Francesco Gringoli, Lorenzo Nava, Lusheng Ji, Seungjoon Lee, Robert Miller
NSDI 2010 (Networked Systems Design and Implementation) 17% Acceptance

On the Fidelity of 802.11 Packet Traces
Aaron Schulman, Dave Levin and Neil Spring
PAM 2008 (Passive and Active Measurement Conference) 32% Acceptance

Workshop Publications

Visualizing Real-Time Network Resource Usage (NetGrok)
Ryan Blue, Cody Dunne, Adam Fuchs, Kyle King and *Aaron Schulman*
VizSEC 2008 (Workshop on Visualization for Cyber Security) 72% Acceptance

Demos

Stratus: Energy-Efficient Mobile Communication using Cloud Support
Bhavish Aggarwal, Pushkar Chitnis, Amit Dey, Kamal Jain, Vishnu Navda
Venkat Padmanabhan, Ram Ramjee, *Aaron Schulman*, Neil Spring
To appear at SIGCOMM 2010 33% Acceptance

Talks

1. MobiCom 2010: *Bartendr: A Practical Approach to Energy-aware Cellular Data Scheduling*
2. NSDI 2010: *Maranello: Practical Partial Packet Recovery for 802.11*
3. PAM 2008: *On the Fidelity of 802.11 Packet Traces*

Research Experience

University of Maryland (advisor: Neil Spring), College Park, MD
Research Assistant **2007-Present**
Involved in various areas of systems research including: wireless networking, visualizing network measurements, and incentive compatible systems. Using a visualization, we have shown that well known wireless network traces lack fidelity. Currently, we are researching techniques for end user diagnosis of faults in wireless networks.

University of Michigan (mentor: Prabal Dutta), Ann Arbor, MI
Visiting Research Student **2010-Present**

Microsoft Research India (mentors: Navda, Ramjee and Padmanabhan), Bangalore, India
Research Intern **Summer 2009**
Researched and designed a system for energy-aware cellular data scheduling.

Microsoft Research (mentor: Galen Hunt), Redmond, WA
Research Intern **Summer 2008**
Researched and implemented a system that removes the need for synchronizing application data between PCs and mobile devices; without modifying existing PC and mobile applications.

Professional Experience

KEYW Corporation, Annapolis Junction, MD
Software Engineer **2008-Present**
Advising the development of quick reaction software applications.

Northrop Grumman Mission Systems: Essex Windermere, Annapolis, MD
Software Engineer **2007-2008**
Designed and implemented software and hardware for a wireless system.

Consortium Research Fellows Program: National Defense University, Fort McNair, DC
Research Fellow **2005-2007**
Assisted in the design, implementation and presentation of an Information Assurance Laboratory used in executive briefings, presentations to foreign dignitaries and masters level coursework.

Teaching Experience

University of Maryland: CMSC412 Operating Systems
Graduate Teaching Assistant **Fall 2008**
Taught twice weekly, one hour discussions sections. Administered a semester long course project. Graded homework, projects, and the final exam. The projects consisted of adding the following features to an open source educational kernel: process listing, signals, scheduling, synchronization, paging, virtual memory, and an inodes based file system.

University of Maryland: CMSC420 Data Structures
Undergraduate Teaching Assistant **Spring 2006**
Revised and improved the specification for a semester long project. Answered students' questions regarding the project.

Service

- External reviewer: ACM MC2R 2009, IEEE ToN 2009, IEEE Communications Letters 2009, Software: Practice and Experience 2010
- Organizer: Syschat weekly paper discussions 2009-2010
- Data sets: 802.11 traces collected at SIGCOMM 2008

Travel Grants

- $1000 for SIGCOMM 2010
- $250 from the UMD Department of Computer Science for MobiCom 2010

Press

- NetGrok featured in: McRee, Russ "Security Visualization Tools" *Linux Magazine*, Sep. 2009

References

Neil Spring
Dept. of Computer Science and UMIACS
University of Maryland
4133 A.V. Williams Bldg.
College Park, MD 20742
Email: nspring@cs.umd.edu
Phone: (301) 405-2909

Bobby Bhattacharjee
Dept. of Computer Science and UMIACS
University of Maryland
4147 A.V. Williams Bldg.
College Park, MD 20742
Email: bobby@cs.umd.edu
Phone: (301) 405-1658

Venkata N. Padmanabhan
Microsoft Research India
"Scientia"
196/36 2nd Main, Sadashivnagar
Bangalore 560 080, India
Email: padmanab@microsoft.com
Phone: +91 (80) 6658-6004

Michelle Hugue
Dept. of Computer Science
University of Maryland
1125 A.V. Williams Bldg.
College Park, MD 20742
Email: drmeesh@gmail.com
Phone: (301) 405-3012