

Joshua Reich

Columbia University

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EDUCATION

Graduate School of Arts and Sciences, Columbia University, New York, NY
Advisors – Vishal Misra and Dan Rubenstein
Ph.D. in Computer Science, expected Summer 2011.
M.Phil. in Computer Science, February 2006.

School of Engineering and Applied Science, Columbia University, New York, NY
M.S. in Computer Science, May 2004.

Columbia College, Columbia University, New York, NY
B.A. in Mathematics, May 2002.
Honors: Magna Cum Laude

AWARDS AND FELLOWSHIPS

- ARC Student Poster Finalist SIGCOMM '10
- Best Student Demo, ACM MobiCom/MobiHoc '07 Student Demo Competition
- Extraordinary Teaching Assistant Award (Fall '05, Spring '06)
- National Science Foundation, GK-12 Graduate Teaching Fellow
- Member of Phi Beta Kappa: Columbia College, Columbia University
- Charter Member of Golden Key Honor Society: CC, Columbia University
- National Merit 2000 Scholarship Winner

PUBLICATIONS

Joshua Reich, Vishal Misra, Dan Rubenstein and Gil Zussman, **Connectivity Maintenance in Mobile Wireless Networks via Constrained Mobility**, (to appear) *IEEE Infocom*, Shanghai, China, April 2011

Joshua Reich, Oren Laadan, Eli Brosh, Alex Sherman, Vishal Misra, Jason Nieh and Dan Rubenstein, **VMTorrent: Virtual Appliances On-Demand** (Extended Abstract), *ACM SIGCOMM*, New Delhi, India, August, 2010
**ARC Student Poster Competition Finalist (Accompanying Poster)*

Salman A. Baset, Joshua Reich, Jan Janak, Pavel Kasperek, Vishal Misra, Dan Rubenstein, and Henning Schulzrinne, **How Green is IP-Telephony?**, *SIGCOMM Green Networking Workshop*, ACM, August, 2010

Joshua Reich, Michel Goraczko, Aman Kansal, and Jitu Padhye, **Sleepless in Seattle No Longer: An Enterprise Sleep Proxy for Energy Savings**, *USENIX ATC*, June, 2010

Joshua Reich and Augustin Chaintreau, **The Age of Impatience: Optimal Replication Schemes for Opportunistic Networks**, *ACM CoNEXT*, Dec., 2009. (Also appeared as an invited paper in

Allerton, 2009.)

Joshua Reich, Vishal Misra, Dan Rubenstein and Gil Zussman, **Spreadable Connected Autonomic Networks (SCAN)**, Columbia University, Technical Report CUCS-016-08, 2008.

Joshua Reich, Vishal Misra and Dan Rubenstein, **Roomba MADNeT: a Mobile Ad-hoc Delay Tolerant Network Testbed**, *MC2R: Mobile Computing and Communications Review*, ACM Sigmobile, 2008.

Joshua Reich, Vishal Misra and Dan Rubenstein, **The Time Correlated Update Problem**, *Performance Evaluation Review*, ACM Sigmetrics, Smirni, Evgenia, ACM Special Interest Group on Measurement and Evaluation, Volume 35, Number 2, pp. 33-35, September, 2007. (Also appeared in Sigmetrics MAMA, 2007.)

Joshua Reich, Vishal Misra and Dan Rubenstein, **MADNeT Testbed**, *Joint Mobicom / Mobihoc Student Demo Competition*, ACM, Montreal, QC, September, 2007
***Best Student Demo Award Recipient**

Joshua Reich and Elizabeth Sklar, **Robot-Sensor Networks for Search and Rescue**, In *IEEE International Workshop on Safety, Security and Rescue Robotics*, Gaithersburg, MD. August, 2006.

Joshua Reich and Elizabeth Sklar, **Toward automatic reconfiguration of robot-sensor networks for urban search and rescue**. In *First International Workshop on Agent Technology for Disaster Management (ATDM): Fifth International Joint Conference on Autonomous Agents and Multiagent Systems*, Hakodate, Japan. ACM, May, 2006

INVITED TALKS

Sleepless in Seattle No Longer, Networked and Electronic Media Summit: Green Networking Track, Barcelona, Spain. European Commission, Oct. 15, 2010

PATENTS

VMTorrent: A Technique for Quick and Scalable Virtual Machine Distribution and Execution (Inventors: J.Reich, E. Brosh, O. Laadan, A. Sherman, V. Misra, J. Nieh, D. Rubenstein), provisional patent filed Nov., 2010

Device and method for controlling dissemination of data by transfer of sets of instructions between peers having wireless communication capacities (Inventors: A. Chaintreau, J. Reich), filed May, 2009.

Device and method for controlling dissemination of contents between peers having wireless communication capacities, depending on impatience reaction functions (Inventors: A. Chaintreau, J. Reich), filed May, 2009.

EXPERIENCE

Microsoft Research Labs, Redmond, WA
Intern, Summer/Fall 2009

Mentor - Jitu Padhye

- Designed and implemented sleep-proxying system for conserving and measuring power

usage in enterprise desktop machines.

- Deployed proxies of six subnets, conducted extensive measurements.
- Built tools for administration and report generation.

Thomson SA (now Technicolor): Paris Networking Lab, Boulogne, France
Intern, Winter-Spring 2009

Mentor - Augustin Chaintreau

- Worked on content dissemination in opportunistic environments.
- Developed analytic model for assessing content dissemination mechanisms.
- Built simulator, verified performance using published real-world contact traces.

Microsoft Research Labs, Bangalore, India
Summer Intern, Summer 2008

Mentor - Venkat Padmanabhan

- Worked on RFID privacy in mobile P2P networks.
- Designed protocol for object detection w/ minimal information leakage.
- Implemented system prototype on Windows Mobile handsets.

Sandia National Laboratories, Center for Cyber-Defenders
Summer Intern, Summer 2005 (Albuquerque, NM), Summer 2006 (Livermore, CA)

Mentors - Robert Hutchinson, Samuel Mulder, Steve Hurd

- Worked on statistical analysis of NetFlow data for network anomaly detection.
- Assessed collaboration equipment solutions.
- Built malware fingerprinting toolkit. Worked on security simulations framework.
- Coded recursive descent disassembler for Intel x86 platform

PROFESSIONAL SERVICE / MEMBERSHIPS

- Columbia University, Joint CS/EE Networking Seminar Organizer 2010
- Roombacomm Reviewer, 2009
- CoNext 2008 Shadow PC Member
- CS Department PhD Committee Representative 2004-2008
- ACM/ACM SIGCOMM
- USENIX
- IEEE/IEEE Computer Society

TEACHING EXPERIENCE

Columbia University, Department of Computer Science, New York, NY
Instructor, 2005-2006

Taught the course "Introduction to Programming Languages: C++". Formulated course structure and requirements. Lectured and administered all grades.

Columbia University, Department of Computer Science, New York, NY
Teaching Assistant, 2005-2006

Assisted Professor Jonathan Gross in his graduate-level courses "Combinatorial Theory" and "Graph Theory". Graded written homework and examinations. Held office hours and review sessions. Designed and administered website and electronic resources.