

Martin Suchara

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Education

Ph.D. Candidate, Computer Science *2006-present*

Princeton University, Princeton, NJ

- Research of traffic management in computer networks, network routing, and experimental work in security of BGP.
- 3.9 cumulative GPA.

B.S. with Honor, Computer Science, June 2006 *2003-2006*

California Institute of Technology, Pasadena, CA

- Thesis: TCP MaxNet – Background, Algorithms, Implementation and Experiments.
 - Independent research in computer networks and computational geometry; advanced classes in networking, computational complexity and algorithm design.
 - 3.9 cumulative GPA.
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Honors and Awards

- Gordon Wu Fellowship, highest honor bestowed on an incoming student, Princeton University, 2006-present.
 - Upper Class Merit Award for academic achievement and research, California Institute of Technology, 2005-2006.
 - Patricia B. Conklin Scholarship for academic achievement, California Institute of Technology, 2004-2005 and 2005-2006.
 - Marcella and Joel Bonsall Technical Writing Prize, 2005.
 - Named Arthur Rock SURF Fellow, 2005.
 - Fulbright Travel Grant to U.S.A., 2003.
 - Bronze Medal, 15th International Young Physicists' Tournament, 2002.
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Work and Research Experience

Research Assistant – Network Systems Group, Princeton University

Supervisor: Jennifer Rexford

- Worked on projects spanning network management, congestion control, traffic engineering and BGP security.
- Developed skills in optimization theory and gained practical experience with protocol implementation and simulation.

Software Engineer Intern, FastSoft, Inc. *Summer 2006*

- Contributed several features to a new WAN acceleration product.
- Conducted performance testing on a testbed as well as on the Internet.

SURF – Summer Undergraduate Research Fellowship, Caltech *Summer 2005*

Supervisor: Steven Low

- Implemented and optimized a new TCP protocol, TCP MaxNet, in the Linux kernel.
- Evaluated performance of the protocol on the WAN in Lab and provided performance comparisons to other TCP protocols.
- TCP MaxNet achieved max-min fairness and exceptional performance in high loss environments.

Research Assistant – Networking Laboratory, Caltech

Fall 2004

Supervisor: Steven Low

- Developed a set of tools to automate processing of network performance measurements.
- Researched explicit feedback congestion signaling in TCP.

SURF – Summer Undergraduate Research Fellowship, Caltech

Summer 2004

Supervisor: Steven Low

- Developed an automated system to assess performance of TCP in the Internet.
- Compared performance of TCP FAST and TCP Reno.

Teaching

Teaching Assistant – COS424 Interacting with Data, Princeton

Spring 2008

Supervisor: David Blei

- Supervised student projects.
- Helped develop problem sets and held office hours.
- Graded weekly assignments.

Teaching Assistant – COS126 General Computer Science, Princeton

Fall 2007

Supervisor: Douglas Clark

- Conducted precepts and held office hours.
- Graded weekly assignments.

Teaching Assistant – CS38 Introduction to Algorithms, and CS21 Decidability and Tractability, Caltech

Winter 2006

Spring 2005

Winter 2005

Supervisor: Alexei Kitaev, Christopher Umans

- Helped develop problem sets, examinations and solution sets for CS38.
- Graded weekly assignments and held office hours.

Selected Publications

M. Suchara, L. Andrew, R. Witt, K. Jacobsson, B. Wydrowski and S. Low.

Implementation of Provably Stable MaxNet,

Proceedings of BROADNETS, 2008.

M. Suchara, I. Avramopoulos and J. Rexford.

Securing BGP Incrementally,

in CoNext Student Workshop, 2007.

J. He, M. Suchara, M. Bresler, J. Rexford and M. Chiang.

Rethinking Traffic Management: From Multiple Decompositions to a Practical Protocol,

Proceedings of CoNext, 2007.

B. Wydrowski, S. Hegde, M. Suchara, R. Witt and S. Low.

Grid networks and TCP services, protocols, and technologies,

in Grid Networks: Enabling Grids with Advanced Communication Technology, F. Travostino, J. Mambretti, G. Karmous-Edwards (Eds.), John Wiley & Sons, Ltd., 2006, ISBN: 0-470-01748-1.

M. Suchara, R. Witt and B. Wydrowski.

TCP MaxNet – An Implementation and Experiments on the WAN in Lab,

Proceedings of IEEE International Conference on Networks, 2005.

M. Grocky, M. Suchara, Z. Klüber, V. Janovec and Z. Žikmund.
Microscopic Structure of Ferroelastic Domain Walls and Antiphase Boundaries in Crystals of
 β -K₂SO₄ Family,
XV-Czech-Polish seminar: "Structural and Ferroelectric Phase Transitions", 2002.

Technical Skills

- C, C++, Java, Perl, kernel programming, bash, Matlab, HTML, JavaScript, etc.
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Languages

- French – intermediate
- German – intermediate