

# SAMUEL I. DAITCH

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43 Edwards St. Apt. 2  
New Haven, CT 06511

<http://samdaitch.com/>  
[samuel.daitch@yale.edu](mailto:samuel.daitch@yale.edu)

## Education

- **Yale University**—New Haven, CT  
*PhD, Computer Science, August 2009*  
*MPhil, Computer Science, December 2007*  
*MS, Computer Science, December 2007*
- **Massachusetts Institute of Technology**—Cambridge, MA  
*MEng, Electrical Engineering and Computer Science, September 2004*  
*SB, Computer Science and Engineering, February 2004*  
*SB, Mathematics, June 2003*
  - GPA: 5.0/5.0 (MEng overall), 4.8/5.0 (SB overall),  
5.0/5.0 (CS major), 4.9/5.0 (Math major)

## Experience

- **Argonne National Laboratory**—Lemont, IL  
*Givens Associate, Summer 2007*
  - Supervised by Matt Knepley in Mathematics and Computer Science Division
  - Developed a support-graph preconditioner module for PETSc, a numerical computation toolkit
- **Yale Computer Science Department**—New Haven, CT  
*Research Assistant, 2007-09*
  - Supervised by Prof. Daniel Spielman
- **Hebrew University of Jerusalem**—Jerusalem, Israel  
*Research Assistant, Summer 2005 & 2006*
  - Supervised by Prof. Gil Kalai of HUJI Math Department on analysis of boolean functions
- **Yale Computer Science Department**—New Haven, CT  
*Teaching Fellow for CS462: Networks and Graphs, Fall 2006*  
*Teaching Fellow for CS463, Machine Learning: Fall 2005*
- **MIT Computer Science Department**—Cambridge, MA  
*Teaching Assistant for 6.001, Structure and Interpretation of Computer Programs: Spring 2004*  
*Teaching Assistant for 6.042, Math for Computer Science: Spring 2003*
- **MIT Computer Science and Artificial Intelligence Lab**—Cambridge, MA  
*Research Assistant: Fall 2003, Undergraduate Researcher: 2000-02*
  - Member of Prof. Daniel Jackson's Software Design Group
  - Participated in development of Alloy Analyzer modeling tool

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## Research Papers

- “Efficient Graph-Based Algorithms for Linear Equations, Network Flows, and Machine Learning”
  - PhD Thesis
- “Fitting a Graph to Vector Data”  
with Jonathan A. Kelner and Daniel A. Spielman
  - Proceedings of the 26th annual International Conference on Machine Learning, June 2009, pp. 201-208
- “A Nearly-Linear Time Algorithm for Approximately Solving Linear Systems in a Symmetric M-Matrix”  
with Daniel A. Spielman
  - Dagstuhl Seminar Proceedings 09061, February 2009
- “Faster Approximate Lossy Generalized Flow via Interior Point Algorithms”  
with Daniel A. Spielman
  - Proceedings of the 40th annual ACM Symposium on the Theory of Computing, May 2008, pp. 451-560
- “Preconditioners for 2-Dimensional Trusses”  
with Daniel A. Spielman
  - available at <http://arxiv.org/abs/cs.NA/0703119>, March 2007
- “Translating Alloy using Boolean Circuits”
  - MEng Thesis

## Invited Talks

- “A Nearly-Linear Time Algorithm for Approximately Solving Linear Systems in a Symmetric M-Matrix”
  - Dagstuhl Seminar on Combinatorial Scientific Computing, Dagstuhl, Germany, February 2009
- “Preconditioners for 2-Dimensional Trusses”
  - SIAM Workshop on Combinatorial Scientific Computing, Costa Mesa, California, February 2007

## Honors

- Phi Beta Kappa, Tau Beta Pi, National Merit Scholar