Jacob Scott

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Education

PHD CANDIDATE 3RD YEAR	**Massachusetts Institute of Technology**, Cambridge, MA **Computer Science**
B.S. 2005 MAJOR GPA	**University of California, Berkeley**, Berkeley, CA **Electrical Engineering and Computer Science** 3.82

Honors

2005 – 2008	National Defense Science and Engineering Graduate Fellowship
SUMMER 2005	Melvin M. Goldberg Fellowship
2001 – 2005	Honors in the College of Engineering
2001 – 2005	Regent's and Chancellor's Scholar

Publications

INFOCOM 2006	Ayalvadi Ganesh, Dinan Gunawardena, Peter Key, Laurent Massoulie, and Jacob Scott: **Efficient quarantining of scanning worms: optimal detection and coordination**
WSP2005	Dinan Gunawardena, Jacob Scott, Alf Zugenmaier, and Austin Donnelly: **Countering Automated Exploits with System Security CAPTCHAS**
RECOMB2005	Jacob Scott, Trey Ideker, Richard M. Karp, and Roded Sharan: **Efficient Algorithms for Detecting Signaling Pathways in Protein Interaction Networks**

Patents

CO-INVENTOR	US Patent Application 20070006303: Configuration information protection using cost based analysis US Patent Application 20070006302: System security using human authorization

Work and Research Experience

FALL 2006 – CURRENT	**Massachusetts Institute of Technology** (CSAIL), Cambridge, MA ***Research Assistant*** Working under Professor David Karger on topics in algorithms. Current project concerns polynomial time algorithms for NP-Complete problems with numerical inputs of fixed precision. Masters degree expected January 2008.
SUMMER 2007	**Google** Mountain View, CA ***Software Engineering Intern***. Worked in the MapReduce (distributed computing infrastructure) group, on speed and scalability improvements. Implementation in C++. Ongoing related work on theoretical aspects.
SUMMER 2005	**Tel Aviv University** (CS Division), Tel Aviv, Israel ***Research Intern***. Conducted bioinformatics research under Dr. Roded Sharan. Continued previous work on pathway discovery in protein interaction networks, and started a new project to examine large-scale over represented network motifs. Work included design, implementation, and writing.
FALL 2004	**Microsoft Research**, Cambridge, England ***Research Intern***. Researched Internet worms, specifically possible transmission optimizations and containment based countermeasures. Analyzed corporate network traces, tested new containment measures. Work also touched on system security.

SPRING 2003 – SPRING 2005	**UC Berkeley** (CS Division), Berkeley, CA ***Research Assistant***. Worked under Professor Richard Karp on two projects: a router-level mechanism to promote fairness on congested networks, and algorithms to efficiently find biologically significant pathways in protein interaction networks. Both projects involved design and implementation.
SUMMER 2004	**Washington Internships for Students in Engineering - IEEE-USA**, Washington, DC ***Policy Intern***. Served as one of twelve engineering interns in a public policy related internship. Researched and authored a paper on the role of the public sector in the fight against spam, including an evaluation of current and future technological solutions to spam. Interviewed numerous individuals in both the private and public sector. Awarded best presentation.
SUMMER 2003	**Amazon.com**, Seattle, WA ***Summer Intern***. Worked in *Developer Tools* group designing scalable, fault tolerant, and distributed services on top of Tibco Rendevous. Worked as part of a team designing and deploying Amazon's next generation software deployment tools. Dealt directly with customers (Amazon developers from other divisions).
SUMMER 2002	**National Institute of Standards and Technology**, Gaithersburg, MD ***Summer Undergraduate Research Fellow***. Conducted distributed systems research centered on Jini network technology from Sun. Wrote a Jini service to support file I/O for a distributed compute server.

Skills

PROGRAMMING LANGUAGES	Java, Python, C++, C, Scheme, LISP
OPERATING SYSTEMS	Windows (95-XP), Redhat Linux, FreeBSD, Solaris, IRIX

Coursework

COMPLETED	Data Structures, Machine Structures, Discrete Math Operating Systems, Compilers, Databases, Computer Graphics Algorithms, Combinatorics and Discrete Probability, Computability and Complexity Graduate: Advanced Algorithms, Cryptography, Machine Learning Networking, Randomized Algorithms, Sublinear Algorithms
CURRENT	Streaming Algorithms, Spectral Methods

Last Updated: September 14, 2007