Jamie H. Morgenstern

Contact Information

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Research Interests

Approximation algorithms, randomized algorithms, algorithmic game theory, logic, formal specification and verification of programs

Education

2010-Present Carnegie Mellon University *Ph.D. candidate, Computer Science*
Advisors: Avrim Blum and Frank Pfenning

2006-2010 University of Chicago *General Honors, B.S. w. Honors in Computer Science, B.A. in Mathematics*
Advisor: Umut Acar, thesis: *Adaptive and Precise Root-Finding of Polynomials*

2002-2006 Bigfork High School (*Valedictorial, National Honor Society*)

Honors and Awards

2010-2013 National Science Foundation Graduate Research Fellowship
2011 Microsoft Graduate Women's Scholarship
2010 Hertz Fellowship Finalist
2006-2010 University of Chicago 4-year merit scholarship
2006 National Merit Scholar

Publications

2012 Steven Brams, Michal Feldman, John Lai, Jamie Morgenstern, Ariel Procaccia. "How good is optimal cake-cutting?" *Submitted to the American Association for Artificial Intelligence (AAAI 2012)*

2012 Pranjal Awasthi, Avrim Blum, Jamie Morgenstern, Or Sheffet. "An Algorithm with Additive Error for Near-Perfect Phylogeny Construction." *Submitted to International Consortium on Automata, Languages, and Programming (ICALP 2012)*

2011 Jamie Morgenstern, Deepak Garg, Frank Pfenning. "A Proof-Carrying Filesystem with Revocable and Use-Once Certificates." *International Workshop on Security and Trust Management (STM 2011)*, Copenhagen, Denmark, June 2011

2010 Jamie Morgenstern and Daniel Licata. "Security-Typed Programming within Dependently-Typed Programming." *International Conference on Functional Programming (ICFP 2010)*, Baltimore, Maryland, September 2010

Research Positions

2009-2010 Carnegie Mellon University
Visiting Research Scholar, Computer Science
REU with Frank Pfenning
Work on proof-carrying filesystems, logic and language-based security policy enforecment

2008-2009 University of Chicago
Undergraduate, Computer Science
Research with Umut Acar
Designed an algorithm for finding roots of polynomials to arbitrary precision, where the work done to solve to a certain degree of precision can be used to speed up the calculation of a higher-precision solution

2008 University of Chicago
Undergraduate, Computer Science
REU with Robby Findler
Designed a bug-tracking system for PLaneT, PLT Scheme's package repository, looking for a shorter fix-time for those programmers using contracts in the packages

2007 University of Chicago
Mathematics REU
Took advanced summer courses and worked on a number of graph theory and number theory problems

2006-2007 University of Chicago
REU with Chuan He, Biological and Physical Sciences
Lab work position focusing on engineering proteins with highly selective affinity for heavy metals

Talks

Sept 2011 "An Algorithm with Additive Error for Near-Perfect Phylogeny Construction." Theory Lunch, CMU, Pittsburgh, USA.

June 2011 "A Proof-Carrying Filesystem with Revocable and Use-Once Certificates." 2011 STM Workshop, Copenhagen, Denmark.

Teaching

2011 Head T.A. for Introduction to Imperative Programming (15-122)

2006-2008 Polk Brothers Program
T.A. for continuing education for CPS math teachers

2006-2010 Polk Brothers Program
Guest lecturer, tutor, and lesson planner in middle school math classrooms

2009 Undergraduate T.A. for Discrete Mathematics, University of Chicago

Service

2011-Present Admitted Students Open House Coordinator

2011-Present Speakers Club Committee

2011-Present Computer Science Department Admissions Committee

2010-Present SCS Sisters Mentoring Program

Work Experience

2010 Google
Product Search Development Intern
Designed a language for describing, parsing, rendering, and translating numeric attributes of products for browse features.