

Saeed Alaei

Department of Computer Science
Cornell University
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Ithaca, NY 14850

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Research Interest

- Mechanism Design, Algorithmic Game Theory
- Optimization, Combinatorial Optimization, Stochastic Optimization
- Online Algorithms

Education

- **Postdoctoral Research Associate** 2012 - present
Department of Computer Science, Cornell University, Ithaca, NY
- **Ph.D. in Computer Science** 2007 - 2012
University of Maryland, College Park, MD
GPA: 4.0/4.0, Advisor: Prof. Samir Khuller
- **M.Sc. in Computer Science** 2005 - 2007
University of Maryland, College Park, MD
GPA: 4.0/4.0, Advisor: Prof. Samir Khuller
- **B.Sc. in Computer Engineering** 2001 - 2005
Sharif University of Technology, Tehran, Iran
GPA: 16.86/20.0, Advisor: Prof. Mohammad Ghodsi

Awards & Honors

- **Bronze Medal**, 13th International Olympiad in Informatics, Tampere, Finland, 2001.
- **Gold Medal**, 10th National Olympiad in Informatics, Iran, 2000.
- **Bronze Medal**, 17th, National Olympiad in Mathematics, Iran, 1999.
- **Graduate School Fellowship**, University of Maryland, 2005-2007.
- **Ann G. Wylie Dissertation Fellowship**, University of Maryland, 2011.
- **Best student paper award**, The 5th Conference on Web and Internet Economics (WINE), Rome, Italy, 2009.

Conference Papers

- **The Simple Economics of Approximately Optimal Auctions.**
Saeed Alaei, Hu Fu, Nima Haghpanah, Jason Hartline. The 54th Symposium on Foundations of Computer Science (FOCS), 2013.
- **The Online Stochastic Generalized Assignment Problem.**
Saeed Alaei, Mohammadtaghi Hajiaghayi, Vahid Liaghat. The 16th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX), 2013.
- **Bayesian Optimal Auctions via Multi- to Single-agent Reduction.**
Saeed Alaei, Hu Fu, Nima Haghpanah, Jason Hartline, Azarakhsh Malekian. ACM Conference on Electronic Commerce (EC), 2012.

- **Online prophet-inequality matching with applications to ad allocation.** Saeed Alaei, MohammadTaghi Hajiaghayi, Vahid Liaghat. ACM Conference on Electronic Commerce (EC) 2012.
- **Bayesian Combinatorial Auctions: Expanding Single Buyer Mechanisms to Many Buyers.** Saeed Alaei. The 52nd Symposium on Foundations of Computer Science (FOCS), 2011.
Invited to special issue of SIAM Journal on Computing.
Invited to special issue of Games and Economic Behavior.
- **AdCell: Ad Allocation in Cellular Networks.** Saeed Alaei, Mohammad-Taghi Hajiaghayi, Vahid Liaghat, Dan Pei, Barna Saha. The 19th European Symposium on Algorithms (ESA), 2011.
- **Combinatorial Solutions for Representative Allocation in Guaranteed Delivery.** Saeed Alaei, Azarakhsh Malekian, Ravi Kumar, Erik Vee. 16th ACM Conference on Knowledge Discovery and Data Mining (KDD), 2010.
- **An Analysis of Troubled Assets Reverse Auction.** Saeed Alaei, Azarakhsh Malekian. The 5th Conference on Web and Internet Economics (WINE), Rome, Italy, 2009.
Recipient of the *best student paper award*.
- **Online Allocation of Display Advertisements subject to Advanced Sales Contracts.** Saeed Alaei, Esteban Arcaute, Samir Khuller, Wenjing Ma, Azarakhsh Malekian and John A. Tomlin. The 3rd Annual International Workshop on Data Mining and Audience Intelligence for Advertising, ADKDD 2009
- **On Random Sampling Auctions for Digital Goods.** Saeed Alaei, Azarakhsh Malekian, Aravind Srinivasan. ACM Conference on Electronic Commerce (EC), Stanford, 2009.
- **SkipTree: A Scalable Range-Queryable Distributed Data Structure for Multidimensional Data.** Saeed Alaei, Mohammad Toossi. International Symposium on Algorithms and Computation (ISAAC) 2005: 298-307.

Journal Papers

- **Bayesian Combinatorial Auctions: Expanding Single Buyer Mechanisms to Many Buyers.** Saeed Alaei. Accepted to SIAM Journal on Computing, 2013.
- **Competitive Equilibrium in Two Sided Matching Markets with Non-transferrable Utilities.** Saeed Alaei, Kamal Jain, Azarakhsh Malekian. Under revision. Operations Research (Special Issue on Information and Decisions in Social and Economic Networks).
- **On Random Sampling Auctions for Digital Goods.** Saeed Alaei, Azarakhsh Malekian, Aravind Srinivasan. Accepted to ACM Transactions on Economics and Computation, 2013.
- **Skiptree: A new scalable distributed data structure on multidimensional data supporting range-queries.** Saeed Alaei, Mohammad Ghodsi, Mohammad Toossi. Computer Communications, 2013.
- **Competitive Equilibrium in Two Sided Matching Markets with General Utility Functions.** Saeed Alaei, Kamal Jain, Azarakhsh Malekian. SIGecom Exchanges, 2011.

- Technical Skills**
- C++(preferred choice), Java, x86 assembly, L^AT_EX, Asymptote, Boost, Qt.
- Work and Teaching Experiences**
- **Research Intern - Northwestern University**
2011-Summer
Worked under supervision of Jason Hartline.
 - **Research Intern - Microsoft Research (Cambridge)**
2010-Summer
Theory Group, worked under supervision of Jennifer Chayes.
 - **Research Intern - Microsoft Research (Redmond)**
2009-Summer
Theory Group, worked under supervision of Kamal Jain and Yuval Peres.
 - **Intern - Yahoo!**
2008-Summer
APEX Serving Platform, worked under supervision of Rohit Chandra.
 - **Instructor - Advanced C++ programming - National Informatics Olympiad Team (Iran)**
2002, 2003, 2004
 - **Teaching Assistant - University of Maryland**
2005-2010
Combinatorial Optimization, Discrete Structures, Introduction to low level programming, Advanced Data Structures, Network Security.
- Other Professional Activities**
- Served on the program committee of the following conferences: ACM Conference of Electronic Commerce (EC) 2013. Conference on Web and Internet Economics (WINE) 2013.
 - Refereed for the following journals: Operations Research (OR), Algorithmica, Games and Economic Behavior(GEB), ACM Transactions on Economics and Computation (TEAC).
 - Refereed for the following conferences: IEEE Symposium on Foundations of Computer Science(FOCS), ACM Symposium on Theory of Computing(STOC), ACM-SIAM Symposium on Discrete Algorithms (SODA), International Colloquium on Automata, Languages and Programming (ICALP), ACM Conference of Electronic Commerce (EC), ACM Symposium on Parallelism in Algorithms and Architectures (SPAA), Latin American Theoretical Informatics Symposium (LATIN), Conference on Web and Internet Economics (WINE), International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX), International Frontiers of Algorithmics Workshop-International Conference on Algorithmic Aspects of Information and Management (FAW-AAIM).
- Past Research Projects**
- **UbiOS - Ubiquitous Object Space** : A distributed object storage system with advanced access control mechanism using *capability based security*.
 - **Mote-FS with Access Control** : Designing and implementing access control for mote-fs (a snapshot based file system with versioning).

Other

- **GRE - Computer Science**
Score: 880/900 (98%)

December 11, 2004

References

- **Samir Khuller**, Professor & Chair,
Department of Computer Science, Univ. of Maryland, College Park, MD 20742
email: samir@cs.umd.edu
Phone: (301)405-6765
ATTENTION: for reference letter please contact Prof. Khuller's assistant, Adelaide Findlay (adelaide@cs.umd.edu).
- **Aravind Srinivasan**, Professor,
Department of Computer Science, Univ. of Maryland, College Park, MD 20742
email: srin@cs.umd.edu
Phone: (301)405-2695
- **Jason D. Hartline**, Associate Professor,
Electrical Engineering and Computer Science, McCormick School of Engineering,
Northwestern University, Evanston, IL 60208.
email: hartline@eecs.northwestern.edu
Phone: (847) 467-0280
- **Robert D. Kleinberg**, Associate Professor,
Department of Computer Science, Cornell University, Ithaca, NY 14853
email: rdk@cs.cornell.edu
Phone: (607) 255-9200