Ahmad Mahmoody

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Brown University
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Research Interests

- Machine Learning and Statistics

- Graphs and Data Mining

- Randomized and Approximation Algorithms

Education

Brown University, Providence, RI, US.
Ph.D. in Computer Science, 2011–Present. **Advisor:** Eli Upfal and Ben Raphael.

Brown University, Providence, RI, US.
M.Sc. in Computer Science, 2011–2013. **Advisor:** Eli Upfal and Ben Raphael.

Simon Fraser University, Burnaby, BC, Canada.
M.Sc. in Mathematics, 2009–2011. **Advisors:** Cedric Chauve and Ladislav Stacho.

Sharif University of Technology, Tehran, Iran.
B.Sc. in Theoretical Mathematics, 2004–2009.

Honor and Awards

- ACM SIGIR travel award to International Conference on Web Search and Data Mining (WSDM 2016).

- Kanellakis fellowship, Fall 2015.

- RECOMB-CG travel award to RECOMB Satellite Workshop on Comparative Genomics (RECOMB-CG 2010).

- SFU Graduate Fellowship, Summer 2010.

- SFU Special Entrance Scholarships, Fall 2009.

- Silver Medal in 21th National Mathematical Olympiad, Iran, Summer 2003.

Experience

- Internship at Google Research, NYC, Graph Mining Group, Summer 2014. **Mentors:** Silvio Lattanzi and Aditya Bhaskara. Working on Influence Maximization problem, in the classic and the multi-categorical settings.

Teaching

Teaching Assistant, Brown University: CS158: Information Retrieval and Web Search (Spring 2013), CS166: Introduction to Computer Systems Security (Spring 2014), and CS155: Probabilistic Methods in Computer Science (Spring 2015, Spring 2016).

Teaching Assistant, Simon Fraser University: Calculus Workshop (Summer 2011), Computing with Linear Algebra (Spring 2011), Graph Theory I, and Algebra Workshop (Fall 2010), Perspectives on Geometry: Geometry and Imagination (Spring 2010), and Calculus Workshop (Fall 2009)

Teaching Assistant, Sharif University of Technology: Discrete Mathematics (Fall 2008), Algebra II (Spring 2008), Introduction to Mathematics (Fall 2006), and Discrete Mathematics (Fall 2005).

National and Scientific Committees of Iran's National Mathematics and Informatics Olympiads, Young Scholars Club(YSC):

- Teaching: Topics in Mathematics (Informatics Olympiad, Fall 2008), Graph Theory (Math Olympiad, Summer 2007), Combinatorics (Math Olympiad, Summer 2005).
- Member of Problem Designing Committee For The National Mathematical Olympiad (2004-2005, and 2008)

Scientific Services

- Reviewer of Mathematical Review Since 2010.

- **Conferences Refereeing:** KDD 2016, WWW 2016, AAAI 2016, WSDM 2016, CIKM 2015, KDD 2015, WWW 2014, WSDM 2014, ASE/IEEE BigData 2013, ACM-CCS 2013, ISMB/ECCB 2013, WABI 2012, RECOMB 2012.

- **Journal Refereeing:** Utilitas Mathematica, Journal of the ACM.

Talks

- *Wiggins: Detecting Valuable Information in Dynamic Networks Using Limited Resources.* 9th ACM International Conference on Web Search and Data Mining (WSDM 2016), San Francisco, California. February 2016.

- *Optimizing Static and Adaptive Probing Schedules for Rapid Event Detection.* 9th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2015), Houston, Texas. December 2015.

- *Reconstructing Genome Mixtures From Partial Adjacencies.* 10th Annual RECOMB Satellite Workshop on Comparative Genomics, Niteroi, Brazil. October 2012.

- *Tractability results for the Double-Cut-and-Join multichromosomal median problem.*8th PIMS Young Researchers Conference, Vancouver, Canada. May 2011.

Publications

(∗) Co-first author, alphabetically ordered.

1. A. Mahmoody, C. E. Tsourakakis, and E. Upfal, *Scalable Betweenness Centrality Maximization via Sampling.* (In Submission)

2. A. Mahmoody, M. Riondato, and E. Upfal, *Wiggins: Detecting Valuable Information in Dynamic Networks Using Limited Resources.* To Appear in the 9th ACM International Conference on Web Search and Data Mining (WSDM 2016).

3. A. Mahmoody, E. Upfal, and E. M. Kornaropoulos, *Optimizing Static and Adaptive Probing Schedules for Rapid Event Detection.* To Appear in the 9th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2015).

4. I. Hajirasouliha, A. Mahmoody*, and B. Raphael, *Binary tree partitions: A combinatorial approach for analyzing intra-tumor heterogeneity from high-throughput sequencing data.* The 22th Annual International Conference Intelligent Systems for Molecular Biology, ISMB 2014, (Also, Bioinformatics 30 (12), i78-i86).

5. L. Oesper, A. Mahmoody, and B. Raphael, *Inferring Intra-tumor Heterogeneity from High-Throughput DNA Sequencing Data.* Genome Biology (In Press). A preliminary version accepted at 17th Annual International Conference on Research in Computational Molecular Biology (RECOMB 2013), LNCS 7821, Pages 171–172 (Extended Abstract).

6. A. Mahmoody, C. Kahn, and B. Raphael, *Reconstructing Genome Mixtures From Partial Adjacencies*, Proceedings of 10th Annual RECOMB Satellite Workshop on Comparative Genomics (RECOMB-CG 2012), BMC Bioinformatics 2012, 13(Suppl 19):S9.

7. Ahmad Mahmoody, *Tractability Results for The Double-Cut-and-Join Mutlichromosomal Median Problem*, M.Sc. Thesis, Simon Fraser University, 2011.

8. Ahmad Mahmoody, *A Note on Graceful Graphs with Large Chromatic Numbers*, Ars Combinatoria 90 (2009), 423–424.

9. S. Akbari, N. Ghareghani, G.B. Khosrovshahi, and A. Mahmoody*, *On Zero-Sum 6-flows of Graphs*, Linear Algebra and Its Appl. 430 (2009), no. 11-12, 3047–3052.

10. S. Akbari, M. Jamaali, A. Mahmoody*, and S. A. Seyed Fakhari, *On the size of graphs whose cycles have length divisible by a fixed integer*, Australasian Journal of Combinatorics 45 (2009), 67–72.

11. A. Mahmoody, P. Ronagh, and K. Alishahi, *"Introductory Combinatorics"* (Book in Persian), Fatemi Pub. Co., Tehran, Iran, March 2009.

POSTER PRESENTATION

- Ahmad Mahmoody, Cedric Chauve, and Ladislav Stacho, "Theoretical Advances on Multichromosomal Median Computation". RECOMB CG, Ottawa, Canada, 2010, and 2010 CMS Winter Meeting, Vancouver, Canada.

SKILLS

Programming: Python, MATLAB, and C++.