

Mingfei Zhao

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EDUCATION

- Yale University, New Haven, CT** Aug. 2019 – Present
Ph.D. candidate of Computer Science
Advisor: Yang Cai
- McGill University, Montreal, Canada** Sep. 2017 – Aug. 2019
Ph.D. student of Computer Science (not complete, transferred to Yale University)
Advisor: Yang Cai
- McGill University, Montreal, Canada** Sep. 2015 – Apr. 2017
Master of Computer Science (Thesis)
Thesis: Approximating Gains from Trade in Two-sided Markets via Simple Mechanisms
Advisor: Yang Cai GPA: 4.0/4.0
- Tsinghua University, Beijing, China** Sep. 2011 – Jul. 2015
Institute for Interdisciplinary Information Sciences (Yao Class)
Bachelor of Science Major: Computer Science Minor: Pure and Applied Mathematics
GPA: 87.9/100 (major) 86.8/100 (overall)

RESEARCH INTERESTS

My research interests lie in mechanism design, approximation algorithms and algorithmic game theory, including (1) designing simple and approximately-optimal mechanisms in multi-parameter settings, (2) foundational revenue/welfare maximization problems and (3) maximizing Gains from Trade in two-sided markets.

PUBLICATIONS

- On Multi-Dimensional Gains from Trade Maximization**, with Yang Cai, Kira Goldner, Steven Ma. *To appear in Proceedings of the 32nd ACM-SIAM Symposium on Discrete Algorithms (SODA 2021)*
- An Efficient ϵ -BIC to BIC Transformation and Its Application to Black-Box Reduction in Revenue Maximization**, with Yang Cai, Argyris Oikonomou and Grigoris Velegkas. *To appear in Proceedings of the 32nd ACM-SIAM Symposium on Discrete Algorithms (SODA 2021)*
- Simple Mechanisms for Profit Maximization in Multi-item Auctions**, with Yang Cai. *Proceedings of the 2019 ACM Conference on Economics and Computation (EC 19) Pages 217-236*
- The Best of Both Worlds: Asymptotically Efficient Mechanisms with a Guarantee on the Expected Gains-From-Trade**, with Moshe Babaioff, Yang Cai and Yannai A. Gonczarowski. *Proceedings of the 2018 ACM Conference on Economics and Computation (EC 18), Pages 373*
- Simple Mechanisms for Subadditive Buyers via Duality**, with Yang Cai. *Proceedings of the 49th Annual ACM SIGACT Symposium on Theory of Computing (STOC 2017), Pages 170-183*
Invited to the Special Issue of Games and Economic Behavior for STOC/FOCS/SODA
- Approximating Gains from Trade in Two-sided Markets via Simple Mechanisms**, with Johannes Brustle, Yang Cai and Fa Wu. *Proceedings of the 2017 ACM Conference on Economics and Computation (EC 17), Pages 589-590*
- Robust Influence Maximization**, with Wei Chen, Tian Lin, Zihan Tan and Xuren Zhou. *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 16), Pages 795-804*
- Tight Bound on Randomness for Violating the Clouser-Horne-Shimony-Holt Inequality**, with Yifeng Teng, Shenghao Yang and Siwei Wang. *IEEE Transactions on Information Theory (Volume: 62, Issue: 4, April 2016)*

CONFERENCE PRESENTATIONS

On Multi-Dimensional Gains from Trade Maximization

SODA 2021, Virtual

Jan. 2021

Simple Mechanisms for Profit Maximization in Multi-item Auctions

EC 2019, Pheonix, US

June 2019

Approximating Gains from Trade in Two-sided Markets via Simple Mechanisms

EC 2017, Boston, US

June 2017

STOC 17 Workshop: Connections between Theory of Computing and Mechanism Design, Montreal, Canada *June 2017*

Simple Mechanisms for Subadditive Buyers via Duality

China Theory Week 2017, Shanghai, China

July 2017

STOC 2017, Montreal, Canada

June 2017

EXPERIENCE

Software Engineer Intern

July 2018 – Oct. 2018

Google Inc., Mountain View, CA

Host: Saeed Alaei

Our research aimed to design auctions with good revenue robustness under the pctr improvements in ad auctions. We showed that the anchoring scheme can have bad robustness under improvement of predictions in general. For the i.i.d. case where all advertisers share the same value distribution, we proved that by adding a uniform monopoly reserve for every advertiser, the anchoring scheme has good robustness.

Mathematical Contest in Modeling 2014

Feb. 2014

Meritorious Winner

Built a mathematical model studying the tradeoff between road efficiency and safety for different traffic rules in freeways; as a group leader, wrote the simulation program and came up with the main idea of intelligence freeway system.

Students Research Training

Oct. 2012

Tsinghua University, Beijing, China

As a group member, developed an application that allows people to play Bridge game with another three players controlled by an advanced artificial intelligence, wrote the main platform by c++ that supports the application and the "Bidding" part of the artificial intelligence.

SCHOLARSHIPS AND AWARDS

Richard H. Tomlinson Doctoral Fellowship

Sep. 2017

Tsinghua School Plan Scholarship

May 2013

China Mathematics Olympics, Silver Medal

Jan. 2010

China National Olympiad in Informatics (Summer Camp), Silver Medal

Aug. 2009

TEACHING ASSISTANTSHIPS

Economics and Computation, Yale University

Fall 2019

Algorithmic Game Theory, McGill University

Fall 2016, Fall 2018

Algorithm Design, McGill University

Winter 2017, Fall 2017, Winter 2018

Algorithms and Data Structures, McGill University

Winter 2016

TECHNICAL SKILLS

Languages: C++, Python, Matlab, Latex