

Yifeng Teng

CONTACT INFORMATION

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CURRENT EMPLOYMENT

Google Research, New York, NY, United States
Research Scientist, Algorithms and Optimization Team **Oct 2021 - Present**

RESEARCH INTERESTS

I'm broadly interested in theoretical computer science, primarily in algorithmic mechanism design, online algorithms, and optimization.

EDUCATION

University of Wisconsin-Madison, Madison, WI, United States
Ph.D. in Computer Science **Sept 2015 - Aug 2021**

- Advisor: Shuchi Chawla
- Minor: Mathematics

M.S. in Computer Science **Sept 2015 - May 2018**
Tsinghua University, Beijing, China **Aug 2011 - July 2015**
B.Eng in Computer Science, Institute for Interdisciplinary Information Sciences ("Yao Class")

- Advisor: Pingzhong Tang

RESEARCH EXPERIENCE

Google, New York, NY, United States
Software Engineering Intern **May 2020 - Aug 2020**
Work on research projects with Market Algorithms team and Sell-side Ads team on online algorithms and auctions.
Hosts: Melika Abolhassani, Creighton Thomas
Software Engineering Intern **Jun 2019 - Sept 2019**
Work on research projects with Market Algorithms team and Sell-side Ads team on auctions.
Hosts: Rita Ren, Renato Paes Leme, Balasubramanian Sivan
University of Wisconsin-Madison, Madison, WI, United States
Research Assistant **May 2016 - Aug 2021**
Research Assistant of Prof. Shuchi Chawla on mechanism design and online algorithms.
Tsinghua University, Beijing, China
Research Assistant **Jun 2014 - Jun 2015**
Work with Prof. Pingzhong Tang on algorithmic game theory.
Research Assistant **May 2014 - Feb 2015**
Work with Prof. Shenghao Yang on information theory.
Microsoft Research Asia, Beijing, China
Research Intern **Nov 2013 - Feb 2014**
Intern in System Algorithms group at Microsoft Research Asia on search algorithms and online scheduling problems.
Mentor: Thomas Moscibroda.

TEACHING
EXPERIENCE

University of Wisconsin-Madison, Madison, WI, United States

Teaching Assistant of CS540 (Artificial Intelligence) in Fall 2015, and CS302 (Introduction to Programming) in Spring 2016.

INVITED SURVEY
LETTERS

Buy-Many Mechanisms: What Are They and Why Should You Care?

Shuchi Chawla, **Yifeng Teng**, Christos Tzamos. *ACM SIGecom Exchanges* 18.1 (2020): 12-18.

REFEREED
PUBLICATIONS AND
WORKING PAPERS

*Authors are listed in alphabetical order following the traditions of theoretical computer science, unless marked by *.*

Pricing Query Complexity of Revenue Maximization

Renato Paes Leme, Balasubramanian Sivan, **Yifeng Teng**, Pratik Worah. *Proceedings of the Thirtieth Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA), 2023.

Spotlight talk with panel discussion in 2022 INFORMS Revenue Management and Pricing Section Conference (RMP).

Online Allocation and Display Ads Optimization with Surplus Supply

Melika Abolhassani, Hossein Esfandiari, Yasamin Nazari, Balasubramanian Sivan, **Yifeng Teng**, Creighton Thomas. *Proceedings of the 18th International Conference on Web and Internet Economics* (WINE), 2022.

Pricing Ordered Items

Shuchi Chawla, Rojin Rezvan, **Yifeng Teng**, Christos Tzamos. *Proceedings of the 54th Annual ACM SIGACT Symposium on Theory of Computing* (STOC), 2022.

Learning to Price Against a Moving Target

Renato Paes Leme, Balasubramanian Sivan, **Yifeng Teng**, Pratik Worah. *Proceedings of the Thirty-Eighth International Conference on Machine Learning* (ICML), 2021.

Pandora's Box with Correlations: Learning and Approximation

Shuchi Chawla, Evangelia Gergatsouli, **Yifeng Teng**, Christos Tzamos, Ruimin Zhang. *Proceedings of the 2020 IEEE 61th Annual Symposium on Foundations of Computer Science* (FOCS), 2020.

Menu-Size Complexity and Revenue Continuity of Buy-Many Mechanisms

Shuchi Chawla, **Yifeng Teng**, Christos Tzamos. *Proceedings of the 2020 ACM Conference on Economics and Computation* (EC), 2020.

Why Do Competitive Markets Converge to First-Price Auctions?

Renato Paes Leme, Balasubramanian Sivan, **Yifeng Teng**. *Proceedings of the 2020 World Wide Web Conference* (WWW), 2020 (Long Oral).

Revenue Maximization for Query Pricing

Shuchi Chawla, Shaleen Deep, Paraschos Koutris, **Yifeng Teng**. *Proceedings of the VLDB Endowment* 13.1 (2019): 1-14.

Buy-Many Mechanisms Are Not Much Better Than Item Pricing

Shuchi Chawla, **Yifeng Teng**, Christos Tzamos. *Proceedings of the 2019 ACM Conference on Economics and Computation* (EC), 2019.

Invited to Special Issue.

Journal version in *Games and Economic Behavior* Vol. 134, 2022.

Pricing for Online Resource Allocation: Intervals and Paths

Shuchi Chawla, Benjamin Miller, **Yifeng Teng**. *Proceedings of the Thirtieth Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA), 2019.

Computational Issues in Time-Inconsistent Planning

Pingzhong Tang, **Yifeng Teng**, Zihe Wang, Shenke Xiao, Yichong Xu. In *Thirty-First AAAI Conference on Artificial Intelligence* (AAAI), 2017 (Oral).

Tight Bound on Randomness for Violating the Clauser–Horne–Shimony–Holt Inequal-

ity

***Yifeng Teng**, Shenghao Yang, Siwei Wang, Mingfei Zhao. *IEEE Transactions on Information Theory*, 62(4), 1748-1757.

Worst-Case Welfare of Item Pricing in the Tollbooth Problem

Zihan Tan, **Yifeng Teng**, Mingfei Zhao.

Buy-Many Mechanisms for Many Unit-Demand Buyers

Shuchi Chawla, Rojin Rezvan, **Yifeng Teng**, Christos Tzamos.

INVITED TALKS

The Power of Simple Pricings for Revenue and Welfare Maximization

- Google Research, Virtual, Mar 2021.
- Peking University, Virtual, Oct 2020.
- Microsoft Research, New York, NY, United States, Jan 2020.

Buy-Many Mechanisms: What Are They and Why Should You Care?

- INFORMS Annual Meeting, Virtual, Nov 2020.

Buy-Many Mechanisms Are Not Much Better Than Item Pricing

- The “Young” Workshop on Economics and Computation (YoungEC), Tel-Aviv University, Israel, Dec 2019.
- Mid-West Theory Day, Purdue University, West Lafayette, IN, United States, Apr 2019.

SERVICE

Conference Reviewer: ITCS’23, SODA’23, EC’22, STOC’22, WWW’22, ITCS’22, AAI’22, SODA’22, WINE’21, FOCS’21, EC’21, STOC’21, AAI’21, WINE’20, NeurIPS’20, EC’20, STOC’20, AAI’20, SODA’20, ICALP’19, STOC’19, ESA’18, EC’18.

Journal Reviewer: Games and Economic Behavior (GEB), SIAM Journal on Computing (SICOMP), Artificial Intelligence (AIJ).

AWARDS

Baidu Scholarship

2012-2015

Award to students with academic excellence in college each year.

Freshman Scholarship

2011-2015

Award to top freshman students in Tsinghua University.

Gold Medal in CMO 2011

Jan 2011

First prize in Chinese Mathematical Olympiads. (Top 40 among all Chinese high school students.)

Bronze Medal in NOI 2010

Aug 2010

Third prize in Chinese National Olympiads in Informatics. (Top 150 among all Chinese high school students.)

Bronze Medal in CMO 2010

Jan 2010

Third prize in Chinese Mathematical Olympiads. (Top 150 among all Chinese high school students.)

PROGRAMMING
LANGUAGES

C++, Java, Python, SQL

ACADEMIC
REFERENCES

Shuchi Chawla

Professor

Department of Computer Science

University of Texas at Austin

Austin, TX 78712

shuchi@cs.utexas.edu

Christos Tzamos

Assistant Professor

Department of Computer Sciences

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Research Scientist
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Paris Koutris
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