

# Wei Tang

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- RESEARCH INTERESTS Human-centered machine learning, sequential decision-making with uncertainty, algorithmic economics, behavioral (social) sciences and optimization.
- APPOINTMENTS **Postdoctoral Research Fellow**  
Data Science Institute, Columbia University, NYC, NY Sep 2022 – Present  
Mentor: [Shipra Agrawal](#)
- EDUCATION **Washington University in St. Louis**, St. Louis, MO  
Ph.D in Computer Science. Sep 2017 – Aug 2022  
Advisor: [Chien-Ju Ho](#)
- Tianjin University**, Tianjin, China  
B.E. in Engineering Sep 2013 – Jun 2017
- AWARDS **Best Paper Honorable Mention**, 11/2021  
9th AAAI Conference on Human Computation and Crowdsourcing (HCOMP).  
**Rising Star in Data Science**, 10/2021  
Data Science Institute, University of Chicago.  
**Honors** (top 15% of grad. students), 2019-2020, 2020-2021  
Washington University CSE department.
- WORKING PAPERS Dynamic Pricing and Demand Learning with Averaging Reference Effect  
( $\alpha$ - $\beta$ ) Shipra Agrawal, **Wei Tang**  
Under preparation for *Operations Research*
- [Rationality-Robust Information Design: Bayesian Persuasion under Quantal Response](#)  
( $\alpha$ - $\beta$ ) Yiding Feng, Chien-Ju Ho, **Wei Tang**  
Under review
- PUBLICATIONS (**NeurIPS'23**) [Dynamic Pricing and Learning with Bayesian Persuasion](#)  
( $\alpha$ - $\beta$ ) Shipra Agrawal, Yiding Feng, **Wei Tang**  
*In Proc. of The 37th Conference on Neural Information Processing Systems*  
Under preparation for *Operations Research*
- (**NeurIPS'23**) HAINet: Encoding Human Behavior in Automated Information Design  
Guanghai Yu, **Wei Tang**, Saumik Narayanan, Chien-Ju Ho  
*In Proc. of The 37th Conference on Neural Information Processing Systems*
- (**SODA'23**) [Competitive Information Design for Pandora's Box](#)  
( $\alpha$ - $\beta$ ) Bolin Ding, Yiding Feng, Chien-Ju Ho, **Wei Tang**, Haifeng Xu.  
*In Proc. of The 34th ACM-SIAM Symposium on Discrete Algorithms.*  
Under preparation for *Mathematics of Operations Research*
- (**EC'22**) [Online Bayesian Recommendation with No Regret](#)  
( $\alpha$ - $\beta$ ) Yiding Feng, **Wei Tang**, Haifeng Xu.  
*In Proc. of The 23rd ACM conference on Economics and Computation.*  
Under review at *Operations Research*

(AIES'22) [How Does Predictive Information Affect Human Ethical Preferences?](#)  
Saumik Narayanan, Guanghui Yu, **Wei Tang**, Chien-Ju Ho, and Ming Yin.  
*In Proc. of The 5th AAAI/ACM Conference on AI, Ethics, and Society.*

(NeurIPS'21) [Bandit Learning with Delayed Impact of Actions](#)  
**Wei Tang**, Chien-Ju Ho, Yang Liu.  
*In Proc. of The 35th Conference on Neural Information Processing Systems.*  
Also Presented at Fairness in AI/ML models at INFORMS, 2019.

(HCOMP'21) [On the Bayesian Rational Assumption in Information Design](#)  
**Wei Tang**, Chien-Ju Ho. *In Proc. of The 9th AAAI Conference on Human Computation and Crowdsourcing.*

**Best Paper Honorable Mention**

(AISTATS'21) [Linear Models are Robust Optimal Under Strategic Behavior](#)  
**Wei Tang**, Chien-Ju Ho, Yang Liu.  
*In Proc. of The 24th International Conference on Artificial Intelligence and Statistics.*

(NeurIPS'20) [Optimal Query Complexity of Secure Stochastic Convex Optimization](#)  
**Wei Tang**, Chien-Ju Ho, Yang Liu.  
*In Proc. of The 34th Conference on Neural Information Processing Systems.*

(AAMAS'20) [Differentially Private Contextual Dynamic Pricing](#)  
**Wei Tang**, Chien-Ju Ho, Yang Liu.  
*In Proc. of the 19th International Conference on Autonomous Agents and Multiagent Systems.*

(WWW'19) [Leveraging Peer Communication to Enhance Crowdsourcing](#)  
**Wei Tang**, Chien-Ju Ho, Ming Yin.  
*In Proc. of The Web Conference.*

(AAMAS'19) [Bandit Learning with Biased Human Feedback](#)  
**Wei Tang**, Chien-Ju Ho.  
*In Proc. of the 18th International Conference on Autonomous Agents and Multiagent Systems.*  
Also presented as the contributed talk at The first Workshop on Behavioral EC, June 2019.

Tumor origin detection with tissue-specific miRNA and DNA methylation markers  
**Wei Tang**, Shixiang Wan, Zhen Yang, Andrew E Teschendorff, Quan Zou. **Bioinformatics** 34.3 (2018): 398-406.

dbDEMC 2.0: updated database of differentially expressed miRNAs in human cancers  
Zhen Yang, Liangcai Wu, Anqiang Wang, **Wei Tang**, Yi Zhao, Haitao Zhao, Andrew E. Teschendorff. **Nucleic acids research** 45.D1 (2017): D812-D818.

Which statistical significance test best detects oncomiRNAs in cancer tissues? An exploratory analysis  
**Wei Tang**, Zhijun Liao, Quan Zou. **Oncotarget** 7.51 (2016): 85613.

RESEARCH  
EXPERIENCE

**Research Assistant.** 2017 – 2022  
Department of Computer Science & Engineering, Washington University. *St.Louis, MO*  
Supervisor: Chien-Ju Ho

**Summer Research Intern.** Jun – Sep, 2020

Alibaba DAMO Academy. (Remote)  
Mentor: Bolin Ding

*Seattle, WA*

TALKS

**Learning with Two-sided Information Asymmetry: Online Recommendation and Dynamic Pricing**  
Harvard EconCS Seminar Oct 2023

**Dynamic Pricing and Learning with Bayesian Persuasion**  
INFORMS Annual Meeting, Phoenix, AZ Oct 2023  
Columbia Statistical Machine Learning Symposium Apr 2023

**Rationality-Robust Information Design: Bayesian Persuasion under Quantal Response**  
The 34th Stony Brook International Conference on Game Theory July 2023

**Competitive Information Design for Pandora's Box**  
Eighth Marketplace Innovation Workshop (MIW). May 2023  
Gaoling School of Artificial Intelligence, Renmin University of China. Nov 2022

**Online Bayesian Recommendation with No Regret**  
SIGecom Seminar Series, Virtual. Dec 2022  
INFORMS Annual Meeting, Indianapolis, IN. Oct 2022  
The 23rd ACM Conference on Economics and Computation, Boulder, CO. July 2022  
INFORMS Revenue Management and Pricing Section Conference, Virtual. June 2022

**Learning with Understanding: Human Behavior in Algorithm Design**  
The Rising Stars in Data Science workshop at the University of Chicago. Nov 2021

**Optimal Query Complexity of Secure Stochastic Convex Optimization**  
Workshop on Economics of Privacy and Data Labor (ICML'20). Jun 2020

**Linear Models are Robust Optimal Under Strategic Behavior**  
Workshop on Incentives in Machine Learning (ICML'20). Jun 2020

**Bandit Learning with Biased Human Feedback**  
Contributed Talk at The first Workshop on Behavioral EC. Jun 2019  
International Conference on Autonomous Agents and Multiagent Systems (AAMAS). May 2019

TEACHING

**Teaching Assistant**  
Human-in-the-loop Computation (CSE 518A WashU) Fall 2019

SERVICES

**Workshop Organization**  
Co-Chair, RMP session on Pricing and Information in Modern Marketplaces at INFORMS Annual Meeting 2023

**Journal Referee**  
Operations Research (OR)  
Manufacturing and Service Operations Management (MSOM)  
Journal of Machine Learning Research (JMLR)  
Transactions on Economics and Computation (TEAC)  
Machine Learning Journal (MLJ)

### Conference Program Committee

Neural Information Processing Systems (NeurIPS): 2021–2023  
International Conference on Machine Learning (ICML): 2022 – 2023  
AAAI Conference on Artificial Intelligence (AAAI): 2021-2024  
ACM Conference on Fairness, Accountability, and Transparency (FAccT): 2022 – 2023  
Uncertainty in Artificial Intelligence (UAI): 2022  
International Conference on Learning Representations (ICLR): 2022, 2024  
Conference On Web And InterNet Economics: 2022  
International Conference on Autonomous Agents and Multiagent Systems: 2022  
International Symposium on Algorithmic Game Theory: 2022  
International Conference on Artificial Intelligence and Statistics (AISTATS): 2021

### REFERENCES

#### **Prof. Shipra Agrawal**

Industrial Engineering and Operations Research  
Columbia University  
E-mail: [sa3305@columbia.edu](mailto:sa3305@columbia.edu)

#### **Prof. Chien-Ju Ho**

Computer Science & Engineering  
Washington University in St. Louis  
E-mail: [chienju.ho@wustl.edu](mailto:chienju.ho@wustl.edu)

#### **Prof. Haifeng Xu**

Computer Science  
University of Chicago  
E-mail: [haifengxu@uchicago.edu](mailto:haifengxu@uchicago.edu)

#### **Prof. Yiling Chen**

Computer Science  
Harvard University  
E-mail: [yiling@seas.harvard.edu](mailto:yiling@seas.harvard.edu)

#### **Prof. Yang Liu**

Computer Science and Engineering  
University of California, Santa Cruz  
E-mail: [yangliu@ucsc.edu](mailto:yangliu@ucsc.edu)