Yixuan (Even) Xu

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Education

Tsinghua University, Beijing, China | **Sep 2020 – Now**
Bachelors of Engineering in Computer Science (Yao Class) | *GPA: 4.0/4.0 Rank: 1/79*
Coursework: Algorithm Design A+, Game Theory A+, Theory of Computation A+

Experience

Carnegie Mellon University | **Feb 2023 – Sep 2023**
Research Intern | *Advisors: Fei Fang and Vincent Conitzer*

Beijing Academy of Artificial Intelligence | **Apr 2021 – Sep 2021**
Research Intern | *Advisors: Yang Yuan*

Publications

On the Perturbation Function of Ranking and Balance for Weighted Online Bipartite Matching
Authors: Jingxun Liang, Zhihao Gavin Tang*, **Yixuan Even Xu***, Yuhao Zhang*, Renfei Zhou** | **ESA 2023**
- ArXiv preprint available at https://arxiv.org/abs/2210.10370.
- We prove the uniqueness of a function used in the optimal algorithms for the AdWords Problem and the Vertex Weighted Online Bipartite Matching Problem and refute a previous conjecture about a well-known algorithm for AdWords.

Unpublished Research Projects

Aggregating Quantitative Relative Judgements:
From Social Choice to Interpretable Ranking Prediction
*Authors: **Yixuan Even Xu**, Hanrui Zhang, Yu Cheng, Vincent Conitzer* | **May 2023 – Aug 2023**
- Submitted to **AAAI 2024**, under review.
- We study the quantitative judgment aggregation problem in social choice, where we propose QRJA rules and study their computational properties. We also show it empirically offers effective and interpretable contest ranking predictions.

Learning Coalition Structures with Games
*Authors: **Yixuan Even Xu**, Chun Kai Ling, Fei Fang* | **May 2022 – Aug 2023**
- Submitted to **AAAI 2024**, under review.
- We propose and study the Coalition Structure Learning problem under one-bit observation and present a novel Iterative Grouping (IG) algorithm to efficiently tackle it, achieving a sample complexity asymptotically matching lower bounds.

Non-Excludable Bilateral Trade Between Groups:
*Authors: **Yixuan Even Xu**, Hanrui Zhang, Vincent Conitzer* | **Feb 2023 – May 2023**
- Submitted to **AAAI 2024**, under review.
- We generalize the traditional bilateral trade problem to a non-excludable setting, where we characterize feasible mechanisms, give a mechanism with all desiderata in some cases, and prove hardness results for others.

A One-Size-Fits-All Approach to Improving Randomness in Paper Assignment
*Authors: **Yixuan Even Xu**, Steven Jecmen, Zimeng Song, Fei Fang* | **Sep 2022 – May 2023**
- Submitted to **NeurIPS 2023**, under review.
- We identify the importance of randomness in paper assignment and formally formulate the problem, where we propose an algorithm that theoretically and empirically outperforms the currently deployed algorithm for randomized assignment.

Bidder Selection Problem in Position Auctions via Poisson Approximation
Authors: Nick Gravin, **Yixuan Even Xu***, Renfei Zhou** | **Jul 2022 – Jan 2023**
- Submitted to **SODA 2024**, under review.
- ArXiv preprint available at https://arxiv.org/abs/2306.10648.
- We propose a novel Poisson-Chernoff relaxation of the Bidder Selection Problem for Position Auctions and give a PTAS (Polynomial-Time Approximation Scheme) that is useful and efficient in practice.

Honors and Awards (Selected)

China National Scholarship | **Oct 2021**
Jiang Nanxiang Scholarship of Tsinghua University | **Oct 2022**

Competitive Programming (Selected)

ICPC Asia-East Continent Final Contest | 3rd Place, **Gold Medal**	**Jul 2022**
ICPC Asia Kunming Regional Contest | 1st Place, **Champion**	**Apr 2022**
China Collegiate Programming Contest Final | 3rd Place, **Gold Medal**	**May 2021**
ICPC Beijing Xiaomi Invitational Contest | 1st Place, **Champion**	**Nov 2020**
National Olympiad in Informatics 2019 | 8th Place, **Gold Medal**	**Jul 2019**
Asia-Pacific Informatics Olympiad 2018 | 7th Place, **International Gold Medal**	**May 2018**
China Team Selection Competition 2018 | 11th Place, **Gold Medal**	**May 2018**
CCF NOI Winter Camp | 27th Place, **Gold Medal**	**Feb 2017**

Others

TOEFL: Total 114, Reading 30, Listening 28, Speaking 28, Writing 28
GRE: Total 336 + 5, Verbal 166, Quantitative 170, Writing 5
Programming Languages: C & C++, LaTeX, Python, Verilog, Matlab
Community Engagement: I have 132.5 hours of officially recorded volunteering work in Tsinghua University
Hobbies: Guitar Playing (Level 10 Amateur), Writing, Singing, Competitive Programming