Yifan Guo

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EDUCATION

University of Science and Technology of China *Expected, June 2024*
Bachelor of Science in Mathematics
- GPA: 4.02/4.3, ranking: 3/63
- **School of the Gifted Young** (skipped the last year of high school)
- NSF (China) Student Research Fellowship (equivalent to ~$15K USD, Sep. 2023 - June 2024)

Selected Math Coursework: Advanced Combinatorics 100, Combinatorics 99, Graph Theory (Graduate) 98, Probability Theory 98, Real Analysis 95, Modern Algebra 95, Differential Equations 95, Functional Analysis 95, Topology 92, Complex Variable 90.
Selected CS Coursework: Computational Economics (Graduate) 92, Foundations of Algorithms 100, Data Structure and Database 97.

University of Chicago *Mar. 2023 - Aug. 2023*
Visiting Student, hosted by Prof. Haifeng Xu and Prof. Ozan Candogan

PUBLICATIONS

- **(α-β)** Ozan Candogan, **Yifan Guo**, Haifeng Xu. On Information Design with Spillovers. Major revision request, Re-submitted to *Operations Research.* [link]
- **(Randomized order)** Jibang Wu Ⓡ Haifeng Xu Ⓡ **Yifan Guo** Ⓡ Weijie Su. An Isotonic Mechanism for Overlapping Ownership. In submission to *Management Science.* [link]

RESEARCH EXPERIENCE

On Information Design with Spillovers *Mar. 2023 - Nov. 2023*
Advised by Prof. Ozan Candogan and Prof. Haifeng Xu
- Considered different settings of spillovers on the network and identified the optimal information structure for the information design problem.
- Characterized the computational complexity of the problem under different communication protocols and provided dynamic programming algorithms when the problem is tractable.
- Implemented our framework for information design in supply chains with spillovers.

An Isotonic Mechanism for Overlapping Ownership *Mar. 2023 - Aug. 2023*
Joint work with Prof. Weijie Su, Jibang Wu, and Prof. Haifeng Xu
- Designed a simple and efficient mechanism (Isotonic Mechanism) to score items under overlapping ownership by truthfully eliciting information from their owners.
- Applied Isotonic Mechanism to improve the scoring procedure of large academic conference peer review where a paper often has multiple authors and many authors have multiple papers.
- Invited to present the result in the poster session at the IDEAL Annual Conference.

Algorithmic Pricing of Machine Learning Predictions *Mar. 2023 - Present*
Advised by Prof. Haifeng Xu
- Studied the problem of selling information to data buyers who face a decision problem under uncertainty, using the classic Bayesian decision-theoretical model.
- Found the optimal solution to sell information to buyers and extract the maximum possible revenue, subject to different realistic constraints such as the limited number of menus and externalities.

HONORS AND AWARDS

- China National Scholarship (Top 1%) *2023, 2022*
- SGY Class of 87 Innovation Scholarship (Top 1%) *2021*
- Excellent Student Scholarship Gold (Top 3%) *2021*
- S.-T.Yau College Student Mathematics Contest (Final, Rank 8th in China) *2022*
- The ICPC Asia Nanjing Regional Contest (Silver Medal) *2022, 2021, 2020*
- Anhui College Programming Contest (First Prize) *2021*
- National Olympiad in Informatics in Provinces (First Prize) *2019, 2018, 2017*

TEACHING EXPERIENCE

Functional Analysis | Teaching Assistant *USTC 2023 Fall*
Algorithmic Game Theory | Teaching Assistant *USTC 2023 Fall*
Foundations of Algorithms | Teaching Assistant *USTC 2022 Fall*

ACTIVITIES

USTC Programming Club | President *2021 - 2022*
- Led the club to achieve a 4-star rating and received the Outstanding President award.

The Student Union of School of the Gifted Young | Member *2020 - 2021*
Men's Football Team of School of the Gifted Young | Captain *2020 - Present*
- Third Place in the "Champions Cup" (Team's All-Time Best) *2021*
- Second Place in the "Chuying Cup" *2020*
- Most Valuable Player (MVP) in the "Chuying Cup" *2020*

TECHNICAL SKILLS

- Language: Chinese, English
- Programming Languages: Python, C, C++, SQL, LaTex, Assembly