

Market Engineer

Behavioral Mechanism Design • Market Complexity • Formal & Statistical Methods

- Senior studying economics with an emphasis on behavioral methods & complexity in market design
- Ranked top four debater in North America; national finalist in British Parliamentary; semifinalist in American
- Excellent composition and editing skills for technical topics (English) and practical Japanese skills (N2 level)
- Self-starter; extensive experience designing and implementing research agendas

SKILLS

Programming:	Python, C https://github.com/bwthomas/
Coursework:	Theory of Probability & Statistics (Formal Methods), Optimization Algorithms, Theory of Computation, Computational Complexity, Graduate Microeconomics, Frontiers in Behavioral Economics & Market Design, Archival Research Methods, Soviet and Chinese History, General Antiquities: Assyria specialty
Extracurriculars:	Travel Team @ Stanford Debate Society, Senior Editor @ Stanford Economic Review

EDUCATION

B.A. Candidate | Economics – Mechanism & Market Design
Minor | History – Archival Methods
Planned M.S. | Computer Science – Complexity & AI Agents

WORK HISTORY

Research Assistant

Itai Ashlagi (Stanford) & Raymond Collin (Cornell) – 6/2024 - Current
Designed and implemented research agenda on LLM behavior for school choice problems. Implemented custom ChatGPT API in C, Dask program for over 700 gigabytes of data, and hurdle regression techniques. Over 5000 lines of code.

College Admissions Counsellor

Founder @ Ben.college – 8/2022 – Current | Seven Points Prep – 8/2021 - Current
Assisted domestic and international students with college admission strategy and effective essay writing. Past clients successfully admitted to Oxford, Cambridge, and Stanford.

HIGHLIGHTED RESEARCH

Behavioral Mechanism Design – Firm Time-Inconsistency in Procurement Auctions – 09/2024 – current

Ongoing research supervised by Doug Bernheim which develops a novel theoretical framework for firm time-inconsistency in procurement auctions using well-tested behavioral principles.

- Supported empirically by natural experiment in Turin, Italy, 2008-2011.
- Provides actionable policy recommendations for procurement auction design.

AI Agents & Simulations – Social Behavior of AI D&D Players – 09/2024 – current

Ongoing research supervised by Joon Park which uses high order statistical techniques to predict strategies of AI agents based on the content of their prompts. Predicts rolls with over 85% accuracy with access to less than 5% of prompt.

- Implements state of the art internal architecture for AI Agents; effective agent recall and no documented hallucinations.
- Comparable to existing human datasets: AI agents are less clever, more pro-social.

Machine Learning & Market Design – Algorithmic Detection of Auction Collusion – 03/2024 – 08/2024

Used machine learning methods (ARIMA and random forest residual classification) to identify collusive bidding rings in auctions with validation accuracy of over 90%.

- Method robust to empirical datasets with up to 8 bidding rings with as many as 20 members.
- Advanced validation confirms model learned structural knowledge; no risk of overfitting or data leakage.