Yanchen Jiang (Jeff Jiang)

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Research Overview

My research lies at the intersection of computer science—specifically machine learning, deep learning, and generative AI—and economics, focusing on mechanism design, incentives, and decision-making. I employ computational frameworks to tackle established problems in economics and mechanism design, deriving novel insights and solutions in unexplored settings. Additionally, I integrate considerations of incentives, human behavior, game theory, and multi-agent interactions into large language models (LLMs) and generative AI, to enhance their applicability in complex economic environments.

Research Interests: Computational Mechanism Design, Large Language Models and Generative AI, Machine Learning, Deep Learning.

Skills:

Proficient: Python (familiar with ML/DL libraries: PyTorch/NumPy/Transformers/Matplotlib/...); LaTeX; Experience with LLMs and Language Model APIs (few-shot and chain-of-thought prompting, multi-agent LLM debate, deploying and finetuning open-source models (e.g. LLaMA 3.1)).

Education

Ph.D. Computer Science 2022-2027 (expected)	**Harvard University** Advisors: Professor David C. Parkes and Professor Yiling Chen Anticipated Graduation Date: May 2027
S.M. Computer Science 2024	**Harvard University** Advisors: Professor David C. Parkes and Professor Yiling Chen
A.B. 2022	**Harvard University** Major: Computer Science and Mathematics; Minor: Statistics Thesis: *Learning to Sell Information* Highest Honors in Computer Science and Mathematics, *cum laude* GPA: 3.89/4.00

Publications and Working Papers

(* indicates equal contribution, α-β indicates alphabetical author order.)

Conference Papers

C2 Tonghan Wang*, Yanchen Jiang* , David C. Parkes. GemNet: Menu-Based, Strategy-Proof Multi-Bidder Auctions Through Deep Learning. *The Twenty-Fifth ACM Conference on Economics and Computation (EC '24)*, Received ***Exemplary Paper Award*** for the AI track, presented at the Best EC '24 papers plenary session.

C1 Sai Srivatsa Ravindranath*, Yanchen Jiang* , David C. Parkes. Data Market Design through Deep Learning. *Advances in Neural Information Processing Systems 36 (NeurIPS 2023).*

Workshop and Exhibition papers

W2 (α-β) Constantinos Daskalakis, Ian Gemp, Yanchen Jiang, Renato Paes Leme, Christos Papadimitriou, Georgios Piliouras. Charting the Shapes of Stories with Game Theory. *NeurIPS 2024 Creative AI track*. Preprint.

W1 Anand Shah*, Kehang Zhu*, Yanchen Jiang, Kerem Dayi, Jeffery Wang, John J. Horton, David C. Parkes. Evidence from the Synthetic Laboratory: Language Models as Auction Participants. *EC'24 contributed poster session; NeurIPS 2024 Workshop on Behavioral Machine Learning.*

Preprint and Working papers in submission

P1 Tonghan Wang*, Heng Dong*, Yanchen Jiang, David C. Parkes, Milind Tambe. On Diffusion Models for Multi-Agent Partial Observability: Shared Attractors, Error Bounds, and Composite Flow. *In submission.*

Talks and Presentations

GemNet: Menu-Based, Strategy-Proof Multi-Bidder Auctions Through Deep Learning

The Twenty-Fifth ACM Conference on Economics and Computation (EC'24) — *New Haven, CT*
Best EC '24 papers plenary session (Short Presentation)
Main Conference (Long Talk) — July, 2024

The Econometric Society 2024 ESIF Economics and AI+ML Meeting — *Ithaca, NY*
Mechanism Design session (*Session Chair*, Long Talk) — August, 2024

Harvard EconCS seminar
Long Talk — Nov, 2024

Data Market Design through Deep Learning

2023 Conference on Neural Information Processing Systems (NeurIPS 2023) — *New Orleans, LA*
Main Conference (Poster Session Presentation) — Dec, 2023

The Econometric Society 2024 ESIF Economics and AI+ML Meeting — *Ithaca, NY*
Pricing in Markets session (Long Talk) — August, 2024

Charting the Shapes of Stories with Game Theory

2024 Conference on Neural Information Processing Systems (NeurIPS 2024) — *Vancouver, Canada*
Creative AI track (Booth Presentation) — Dec, 2024

Teaching

CS136 (Economics and Computation) — Fall, 2023
Head Teaching Assistant, Harvard University

CS136 (Economics and Computation) — Fall, 2021
Teaching Assistant, Harvard University

Professional Service

Conferences reviewing activities
NeurIPS (2024), ICLR (2025), AISTATS (2025), ICML (2025)