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)).

Working Knowledge: R, C, C++, OCaml, MATLAB.

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*, <u>Yanchen Jiang</u>* , 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, <u>Yanchen Jiang</u>, 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*, <u>Yanchen Jiang</u>, 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*, <u>Yanchen Jiang</u>, 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)