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Xintong Wang

Education

2015 – 2021 **University of Michigan, Ann Arbor**, *Ph.D. in Computer Science and Engineering*
- Advisor: Michael P. Wellman

2015 – 2018 **University of Michigan, Ann Arbor**, *M.Sc. in Computer Science and Engineering*

2011 – 2015 **Washington University in St. Louis**, *B.Sc. in Computer Science*
- Second major in Applied Mathematics, the College of Arts & Sciences
- Second major in Finance, the Olin Business School
- *magna cum lauda*

Professional Experience

Jan 2024 – **Assistant Professor**, *Department of Computer Science, Rutgers University, New Brunswick, NJ*

2021 – 2023 **Postdoctoral Fellow**, *Harvard University, Cambridge, MA*
- EconCS Group, School of Engineering and Applied Sciences
- Host: David C. Parkes

Summer 2019 **Research Intern**, *J.P. Morgan AI Research, New York City, NY*
- Mentor: Tucker Hybinette Balch, Manuela Veloso

Summer 2018 **Research Intern**, *Microsoft Research, New York City, NY*
- Mentors: David M. Pennock, David M. Rothschild

Summer 2014 **Algorithmic Trading Intern**, *IMC Financial Markets, Chicago, IL*
- Mentor: Floris Ouwendijk

Research Interests

Develop computational methods to model and analyze complex agent behaviors for the design of efficient market-based algorithmic systems. Leverage data (both simulated and from real marketplaces) to understand agent behavior and inform design decisions, such as market operations, information disclosure policies, and regulatory interventions.
- Methods: AI and machine learning, optimization, multi-agent systems, economics (game theory).
- Application areas: Economic platforms, prediction markets, financial markets and DeFi.

Publications (*: equal contribution)

Journal Publications

Spoofing the Limit Order Book: A Strategic Agent-Based Analysis
Xintong Wang, Christopher Hoang, Yevgeniy Vorobeychik, Michael P. Wellman
Games 2021, 12(2), 46.

Conference Publications

Platform Behavior under Market Shocks: A Simulation Framework and Reinforcement Learning Based Study

Xintong Wang, Gary Qiurui Ma, Alon Eden, Clara Li, Alexander Trott, Stephan Zheng, David C. Parkes

(WWW 2023) *The 2023 ACM Web Conference.*

Differential Liquidity Provision in Uniswap v3 and Implications for Contract Design

Zhou Fan, Francisco Marmolejo-Cossío, Ben Altschuler, He Sun, Xintong Wang, David C. Parkes

(ICAIF 2022) *3rd ACM International Conference on AI in Finance.*

Designing a Combinatorial Financial Options Market

Xintong Wang, David M. Pennock, Nikhil R. Devanur, David M. Rothschild, Biaoshuai Tao, Michael P. Wellman

(EC 2021) *23rd ACM Conference on Economics and Computation.*

Log-time Prediction Markets for Interval Securities

Miroslav Dudík*, Xintong Wang*, David M. Pennock, David M. Rothschild

(AAMAS 2021) *20th International Conference on Autonomous Agents and Multiagent Systems.*

Market Manipulation: An Adversarial Learning Framework for Detection and Evasion

Xintong Wang, Michael P. Wellman

(IJCAI 2020) *29th International Joint Conference on Artificial Intelligence.*

Generating Realistic Stock Market Order Streams

Junyi Li, Xintong Wang, Yaoyang Lin, Arunesh Sinha, Michael P. Wellman

(AAAI 2020) *34th AAAI Conference on Artificial Intelligence.*

Learning-based Trading Strategies in the Face of Market Manipulation

Xintong Wang, Christopher Hoang, Michael P. Wellman

(ICAIF 2020) *1st ACM International Conference on AI in Finance.*

A Cloaking Mechanism to Mitigate Market Manipulation

Xintong Wang, Yevgeniy Vorobeychik, Michael P. Wellman

(IJCAI 2018) *27th International Joint Conference on Artificial Intelligence.*

Spoofing the Limit Order Book: An Agent-based Model

Xintong Wang, Michael P. Wellman

(AAMAS 2017) *16th International Conference on Autonomous Agents and Multiagent Systems.*

Workshop & Consortium Papers

Studies on the Computational Modeling and Design of Financial Markets

Xintong Wang

AAMAS 2019 Doctoral Consortium.

Market Making with Liquidity Adaptation via Learning Rate Tuning

Xintong Wang

EC 2017 Workshop on Forecasting.

Honors & Awards

2022 **Rising Stars in Data Science**, *hosted by the University of Chicago*

2020 **Finalist, CSE Graduate Student Honors Competition**, *University of Michigan, Ann Arbor*

2019 **Rising Stars in EECS Workshop**, *hosted by the University of Illinois Urbana-Champaign*

2017 **D. E. Shaw Exploration Fellowship**

2015 **Distinction in Mathematics**, *Washington University in St. Louis*

2014 **University Scholarship**, *Washington University in St. Louis*

Talks

AI for Market and Policy Design: Integrating Data, Algorithms, and Economic Modeling

Jan 2023 Seminar, Information and Decision Sciences, University of Illinois Chicago, Chicago, IL

Feb 2023 EconCS Seminar, Computer Science Department, Peking University, Beijing, China

Feb 2023 Seminar, Data Science Department, William & Mary, Williamsburg, VA

Mar 2023 Seminar, Computer Science Department, Rutgers University, New Brunswick, NJ

Mar 2023 Seminar, Computer Science Department, University of British Columbia, Vancouver, BC, Canada

Apr 2023 Seminar, Computer Science Department, University of North Carolina at Chapel Hill, NC

Platform Behavior under Market Shocks: A Simulation Framework and Reinforcement Learning Based Study

Jan 2023 Seminar, Information and Decision Sciences, University of Illinois Chicago, Chicago, IL

Nov 2022 Data Science Institute, the University of Chicago, Chicago, IL

Designing a Combinatorial Financial Options Market

Oct 2022 INFORMS Conference, Data-driven Market Design Session, Indianapolis, IN

Oct 2021 NBER Market Design Working Group Meeting, Virtual

Oct 2021 INFORMS Conference, Auctions and Market Design Session, Virtual

Aug 2021 International Joint Conference on Theoretical Computer Science, Virtual

July 2021 ACM Conference on Economics and Computation, Virtual

Mar 2021 DIMACS 2021 Workshop on Forecasting: From Forecasts to Decisions

Log-time Prediction Markets for Interval Securities

Nov 2022 The Crypto Economics Security Conference, UC Berkeley.

July 2022 Mentoring Workshop, ACM Conference on Economics and Computation, Virtual

May 2021 International Conference on Autonomous Agents and Multiagent Systems, Virtual

May 2020 The Web Conference Workshop on the Intersection of Machine Learning and Mechanism Design

Nov 2019 EconCS Seminar, Peking University, Beijing, China

Market Manipulation: An Adversarial Learning Framework for Detection and Evasion

Jan 2023 The Financial Industry Regulatory Authority, Virtual

Nov 2022 Data Science Institute, the University of Chicago, Chicago, IL

Nov 2022 School of Intelligent Science and Technology, Peking University, Virtual

Nov 2020 CSE Graduate Student Honors Competition, University of Michigan

July 2020 International Joint Conference on Artificial Intelligence, Virtual

Dec 2019 NeurIPS Workshop on Robust AI in Finance, Vancouver, Canada

Aug 2019 Seminar, J.P. Morgan AI Research, New York City, NY

Generating Realistic Stock Market Order Streams

Aug 2019 Seminar, J.P. Morgan AI Research, New York City, NY

June 2019 ICML Workshop on AI in Finance: Applications for Multiagent Learning, Long Beach, CA

Learning-based Trading Strategies in the Face of Market Manipulation

Oct 2020 ACM International Conference on AI in Finance, Virtual

June 2019 ICML Workshop on AI in Finance: Applications for Multiagent Learning, Long Beach, CA

A Cloaking Mechanism to Mitigate Market Manipulation

May 2019 Doctoral Consortium, AAMAS, Montreal, Canada

July 2018 International Joint Conference on Artificial Intelligence, Stockholm, Sweden

Spoofing the Limit Order Book: An Agent-based Model

May 2017 International Conference on Autonomous Agents and Multiagent Systems, São Paulo, Brazil

Feb 2017 AAAI 2017 Workshop on Computer Poker and Imperfect Information Games, San Francisco, CA

Teaching & Mentoring Experience

Teaching

Rutgers University, New Brunswick

Instructor, CS598 Topics in Artificial Intelligence: AI Methods for Market Design — Spring 2024

University of Michigan, Ann Arbor

Graduate Student Instructor, EECS 203 Discrete Mathematics — Fall 2016

Washington University in St. Louis

Teaching Assistant, MEC 290 Microeconomics — Springs 2013, 2014, 2015

Teaching Assistant, MGT 100 Individual in a Managerial Environment — Falls 2012, 2013, 2014

Research Mentoring

Harvard University

- David Assaraf, M.Sc. in Data Science — Spring 2022

  Co-advising (with Prof. David C. Parkes), COMPSCI 299R Special Topics in Computer Science.
  Topic: Analyzing Amazon Basics data to model the platform's behavior on launching products.
- Gary Ma, Ph.D. student in Computer Science — 2021 – 2022

  Topic: Modeling platform economies under the pandemic shock.
- Clara Li, B.Sc. in Computer Science — 2021 – 2022

  Senior Thesis: Reinforcement learning for modeling platform economies under shock.

University of Michigan, Ann Arbor

- Christopher Hoang, B.Sc. in Computer Science — 2018 – 2020

  Co-advising (with Prof. Michael P. Wellman), EECS 499 Undergraduate Independent Study.
  Topic: Designing learning-based trading agents. Related publications: Games 2021, ICAIF 2020.
- Shashank Kedia, M.Sc. in Computer Science — Spring 2019

  Co-advising (with Prof. Michael P. Wellman), EECS 599 Graduate Independent Study.
  Topic: Generative models for agent-based activity traces.
- Junyi Li, M.Sc. in Computer Science — 2018 – 2019

  Topic: Generative models for time series data (order streams). Related publications: AAAI 2020.

- Yaoyang Lin, B.Sc. in Computer Science — 2018 – 2019

Topic: Simulation validation and generating time series data. Related publications: AAAI 2020.

- Noah Fidel, B.Sc. in Data Science Engineering — 2017 – 2018

Topic: Simulation validation and learning from limit order book data.

- Meghana Somsaale, B.Sc. in Computer Science — 2017 – 2018

Topic: Evidence and patterns of market manipulation in crypto markets.

- Zheng Chen, B.Sc. in Computer Science — 2017 – 2018

Topic: Anomaly detection on time-series data.

Service

Program Committee Member

- Economics and Computation (EC), 2024
- The Web Conference (WWW), 2024
- Conference on Web and Internet Economics (WINE), 2023
- AAAI Conference on Artificial Intelligence (AAAI), 2021–2023
- International Joint Conference on Artificial Intelligence (IJCAI), 2023
- ACM International Conference on AI in Finance (ICAIF), 2020–2023
- Workshop on Artificial Intelligence for Social Good (AI4SG), 2021

Workshop and Seminar Organization

- Co-Chair, AMD Session on Financial Market Design, INFORMS Annual Meeting, 2021
- Organizer, AI Seminar, University of Michigan, 2018 – 2019

Conference Reviewing

Conference on Autonomous Agents and Multiagent Systems (AAMAS); Conference on Artificial Intelligence, Ethics and Society (AIES); Conference on Economics and Computation (EC); Conference on Artificial Intelligence (IJCAI); Workshop on Matching Under Preferences (MATCH–UP); Conference on Web and Internet Economics (WINE); The Web Conference (WWW).

Journal Reviewing

ACM Transactions on Economics and Computation (TEAC); IEEE Intelligent Systems; Autonomous Agents and Multi-Agent Systems (JAAMAS); Transactions on Pattern Analysis and Machine Intelligence (TPAMI).

Student Mentor

- EC Mentoring Workshop, 2022
- The Ensemble of CSE Ladies+, University of Michigan, 2016 – 2020

References

- **Michael P. Wellman** (Ph.D. advisor)
  Professor of Computer Science and Engineering, *University of Michigan*
  2260 Hayward St, Ann Arbor, MI 48109-2121
  wellman@umich.edu
- **David C. Parkes** (Postdoctoral fellow host)
  Professor of Computer Science, *Harvard University*
  150 Western Ave, 5.303 Boston, MA 02134
  parkes@eecs.harvard.edu

- **David M. Pennock**
  Professor of Computer Science, *Rutgers University*
  96 Frelinghuysen Road Piscataway, NJ 08854-8018
  dpennock@dimacs.rutgers.edu
- **Uday Rajan**
  Professor of Finance, *University of Michigan*
  701 Tappan Ave, Ann Arbor, MI 48109-1234
  urajan@umich.edu