Keegan W. Harris

Curriculum Vitae – April 2025

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Website: keeganharris.github.io

EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Machine Learning Ph.D. Candidate — *August 2020 - Present*
Master of Science - Machine Learning — *2022*
Advisors: Nina Balcan and Steven Wu
Thesis Committee: Michael Jordan, Tuomas Sandholm, Alex Slivkins

The Pennsylvania State University — State College, PA
Bachelor of Science - Computer Science (Mathematics minor) — *2019*
Bachelor of Science - Physics (Electronics option) — *2019*

EMPLOYMENT

Microsoft Research — Cambridge, MA
Research Intern — *Summer 2024*

US Innovative Technology Fund — Pittsburgh, PA
Technical Fellow — *Spring 2024*

Microsoft Research — Cambridge, MA
Research Intern — *Summer 2023*

Vitable Health — Philadelphia, PA
Consultant — *Spring 2022*

US Naval Research Laboratory — Washington, D.C.
Robotics Intern — *Summer 2019*

Penn State Applied Research Laboratory — State College, PA
Undergraduate Researcher — *September 2017 - August 2018*

PUBLICATIONS

CONFERENCE PROCEEDINGS:

1. Akshay Krishnamurthy, **Keegan Harris**, Dylan J. Foster, Cyril Zhang, and Aleksandrs Slivkins. *Can large language models explore in-context?* Neural Information Processing Systems (NeurIPS), 2024.

2. **Keegan Harris**, Zhiwei Steven Wu, and Maria-Florina Balcan. *Regret Minimization in Stackelberg Games with Side Information.* Neural Information Processing Systems (NeurIPS), 2024.

3. **Keegan Harris**, Anish Agarwal, Chara Podimata, and Zhiwei Steven Wu. *Strategyproof Decision-Making in Panel Data Settings and Beyond.* ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS), 2024.

4. Anish Agarwal*, **Keegan Harris***, Justin Whitehouse*, and Zhiwei Steven Wu*. *Adaptive Principal Component Regression with Applications to Panel Data.* Neural Information Processing Systems (NeurIPS), 2023.

5. Mikhail Khodak*, Ilya Osadchiy*, **Keegan Harris**, Maria-Florina Balcan, Kfir Levy, Ron Mier, and Zhiwei Steven Wu. *Meta-Learning Adversarial Bandit Algorithms.* Neural Information Processing Systems (NeurIPS), 2023.

6. **Keegan Harris**, Chara Podimata, and Zhiwei Steven Wu. *Strategic Apple Tasting.* Neural Information Processing Systems (NeurIPS), 2023.

7. **Keegan Harris***, Ioannis Anagnostides*, Gabriele Farina, Mikhail Khodak, Zhiwei Steven Wu, and Tuomas Sandholm. *Meta-Learning in Games.* International Conference on Learning Representations (ICLR), 2023.

8. **Keegan Harris**, Valerie Chen, Joon Sik Kim, Ameet Talwalkar, Hoda Heidari, and Zhiwei Steven Wu. *Bayesian Persuasion for Algorithmic Recourse.* Neural Information Processing Systems (NeurIPS), 2022.

9. **Keegan Harris**, Daniel Ngo*, Logan Stapleton*, Hoda Heidari, and Zhiwei Steven Wu. *Strategic Instrumental Variable Regression: Recovering Causal Relationships From Strategic Responses.* International Conference on Machine Learning (ICML), 2022.

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*Denotes equal contribution and/or alphabetical ordering

10. **Keegan Harris**, Hoda Heidari, and Zhiwei Steven Wu. *Stateful Strategic Regression.* Neural Information Processing Systems (NeurIPS), 2021.

Preprints:

1. **Keegan Harris***, Nicole Immorlica*, Brendan Lucier*, and Aleksandrs Slivkins*. *Algorithmic Persuasion Through Simulation.* https://arxiv.org/pdf/2311.18138

2. Daniel Ngo*, **Keegan Harris***, Anish Agarwal, Vasilis Syrgkanis, and Zhiwei Steven Wu. *Incentive-Aware Synthetic Control: Accurate Counterfactual Estimation via Incentivized Exploration.* https://arxiv.org/pdf/2312.16307

3. Maria-Florina Balcan*, Kiriaki Fragkia*, and **Keegan Harris***. *Learning in Structured Stackelberg Games.* https://arxiv.org/pdf/2504.09006

4. Maria-Florina Balcan*, Martino Bernasconi*, Matteo Castiglioni*, Andrea Celli*, **Keegan Harris***, and Zhiwei Steven Wu*. *Nearly-Optimal Bandit Learning in Stackelberg Games with Side Information.* https://arxiv.org/pdf/2502.00204

5. **Keegan Harris** and Aleksandrs Slivkins. *Should You Use Your Large Language Model to Explore or Exploit?* https://arxiv.org/pdf/2502.00225

Miscellaneous Writings:

1. **Keegan Harris*** and Naveen Raman*. *Carnegie Mellon University at ICLR 2025.* ML@CMU Blog, April 2025.

2. **Keegan Harris**. *Can ChatGPT Learn My Life From a Week of First-Person Video?* White Paper, April 2025.

3. **Keegan Harris*** and Naveen Raman*. *Carnegie Mellon University at NeurIPS 2024.* ML@CMU Blog, December 2024.

4. **Keegan Harris*** and Vasilis Syrgkanis*. *Causal Inference under Incentives: An Annotated Reading List.* SIGecom Exchanges, June 2024.

5. **Keegan Harris**. *Strategic Instrumental Variable Regression: Recovering Causal Relationships from Strategic Responses.* ML@CMU Blog, September 2021.

Awards and Honors

Rising Star in Data Science *2024*
Selected to present at the 2024 Rising Stars in Data Science workshop.

Georgia Tech ISyE Junior Researcher *2024*
Selected to present at the 2024 Georgia Tech ISyE Junior Researcher workshop.

NDSEG Fellowship *2022*
Graduate fellowship funded by the United States Department of Defense.

Summa Cum Laude *2019*
Graduated from Penn State with a perfect 4.00/4 cumulative GPA.

Evan Pugh Senior Scholar Award *2019*
Awarded to senior Penn State students in the top 0.5% of GPA.

Phi Beta Kappa (Early Induction) *2018*
Honors society, inducted as a junior.

Sigma Pi Sigma (Early Induction) *2018*
Physics honors society, inducted as a junior.

HackPSU - 3rd Place Overall *2017*
Placed 3/170 teams at HackPSU Fall 2017 hackathon.

Talks

1. *"Can ChatGPT Learn My Life From a Week of First-Person Video?"*
   SIGBOVIK 2025 (April 2025)

2. *"Should You Use Your Large Language Model to Explore or Exploit?"*
   Carnegie Mellon University, AI Seminar (February 2025)

3. "*Regret Minimization in Stackelberg Games with Side Information*"
   CUHK-Shenzhen, Global Young Scholars Forum (January 2025)
   University of California San Diego, Rising Stars in Data Science Workshop (November 2024)
   Carnegie Mellon University, Computer Science Theory Lunch (November 2024)
   EAAMO Doctoral Consortium (October 2024)
   SINTEF, AI for Security & Defense Reading Group (June 2024)
   NeurIPS 2023, Workshop on Multi-Agent Security (December 2023, Spotlight Presentation)

4. "*Mathematical Foundations of Data-Driven Decision-Making*"
   Carnegie Mellon University, Foundations of Cooperative AI Lab Group Meeting (November 2024)

5. "*Incentive-Aware Synthetic Control: Accurate Counterfactual Estimation via Incentivized Exploration*"
   University of Washington, Kevin Jamieson's Group Meeting (October 2024)
   INFORMS Annual Meeting (October 2024)
   Ninth Marketplace Innovation Workshop (May 2024)

6. "*The ML@CMU Blog: Perspectives After 5 Years*"
   Carnegie Mellon University, CMU Libraries Forum for Student Publishing (September 2024)

7. "*Towards Bridging Causal Inference and Algorithmic Decision-Making*"
   University of Illinois Urbana-Champaign, Machine Learning Seminar (September 2024)
   Massachusetts Institute of Technology, Algorithms & Complexity Seminar (September 2024)
   Microsoft Research Lab - New York City, Machine Learning Discussion Group (April 2024)
   Capital One, Machine Learning Group (April 2024)
   Columbia University, Machine Learning Group (January 2024)

8. "*Large Language Models as Decision-Making Agents*"
   5th Annual NDSEG Fellowship Conference (July 2024)

9. "*Marketplace Design for LLM-Based Sales*"
   EC 2024, Workshop on Foundation Models and Game Theory (July 2024, Oral Presentation)

10. "*Memory Constrained In-Context Decision-Making*"
    Microsoft Research Lab - New England, EconCS Ideas Day (June 2024)

11. "*Information Design with Predictions*"
    SIGMETRICS 2024, Workshop on Learning-Augmented Algorithms (June 2024)

12. "*Algorithmic Persuasion Through Simulation*"
    Georgia Tech, ISyE Junior Researcher Workshop (April 2024)
    Google Research NYC, Algorithms Seminar (January 2024)
    Carnegie Mellon University, Economics Seminar (January 2024)
    Drexel University, EconCS Seminar (October 2023)

13. "*Online Meta-Learning in Games and Bandits*"
    Multi-Agent Learning Seminar (January 2024)
    University of Miami, Industrial and Systems Engineering Seminar (September 2023)

14. "*Algorithmic Decision-Making using Panel Data*"
    Federal Reserve Bank of Philadelphia, Conference on ML in Economics and Finance (December 2023)
    Stanford University, Causal Inference Reading Group (November 2023)
    University of Pennsylvania, Computer Science Theory Seminar (October 2023)
    University of Miami, Computer Science Seminar (August 2023)
    Microsoft Research Lab - New England, ML Ideas Seminar (August 2023)

15. "*Strategyproof Decision-Making in Panel Data Settings and Beyond*"
    INFORMS Annual Meeting (October 2023)
    Online Causal Inference Seminar (May 2023)
    Carnegie Mellon University, FEAT Reading Group (November 2022)

16. "*Algorithmic Decision-Making Under Incentives: Apple Tasting Feedback and Multiclass Learnability*"
    Carnegie Mellon University, AI Seminar (September 2023)
    Simons TOC For Fairness Seminar (May 2023)

17. "*Bayesian Persuasion for Algorithmic Recourse*"
    Tübingen University, Setareh Maghsudi's Group Meeting (February 2023)
    3rd Symposium on the Foundations of Responsible Computing (June 2022)
    AAMAS 2022, Learning with Strategic Agents Workshop (May 2022, Oral Presentation)
    NeurIPS 2021, Workshop on Human and Machine Decisions (December 2021, Oral Presentation)

18. *"Strategic Instrumental Variable Regression: Recovering Causal Relationships From Strategic Responses"*
    AAMAS 2022, Learning with Strategic Agents Workshop (May 2022, Oral Presentation)
    ICML 2021, Workshop on Algorithmic Recourse (July 2021, Spotlight Presentation)

19. *"Decision Making Under Strategic Responses"*
    Carnegie Mellon University, FATES Summer Series (August 2021)

20. *"Stateful Strategic Regression"*
    2nd Symposium on the Foundations of Responsible Computing (June 2021)
    Carnegie Mellon University, FEAT Reading Group (March 2021)

SERVICE

CONFERENCE EXTERNAL REVIEWER:

- ACM Conference on Economics & Computation (EC) 2022
- Conference on Neural Information Processing Systems (NeurIPS) 2021
- Innovations in Theoretical Computer Science (ITCS) 2024, 2022
- Symposium on Discrete Algorithms (SODA) 2022
- Symposium on Foundations of Responsible Computing (FORC) 2024
- Symposium on the Theory of Computation (STOC) 2024

JOURNAL REVIEWER:

- Games and Economic Behavior (GEB)
- Journal of Machine Learning Research (JMLR)

PROFESSIONAL SOCIETIES:

- INFORMS Annual Meeting Session Organizer: Online Marketplaces and Incentives 2024
- Organizer: SIGecom Seminar Series 2022

PROGRAM COMMITTEE:

- AAAI Conference on Artificial Intelligence (AAAI) 2025
- Conference on Artificial Intelligence and Statistics (AISTATS) 2025, 2024, 2023
- Conference on Learning Theory (COLT) 2025
- Conference on Neural Information Processing Systems (NeurIPS) 2024, 2023, 2022
- International Conference on Learning Representations (ICLR) 2025, 2024
- International Conference on Machine Learning (ICML) 2024, 2023, 2022
- The Web Conference (WWW) 2025

UNIVERSITY SERVICE:

- CMU Machine Learning Department Head Search Committee 2024
- CMU Machine Learning Department Speaking Skills Committee 2025, 2024
- CMU Machine Learning Ph.D. Admissions Committee 2024, 2023, 2022
- Editor: ML@CMU Blog 2024
- Head Editor: ML@CMU Blog 2025, 2024
- Mentor: CMU Paths to AI Research Mentoring Program 2024, 2023, 2022, 2021
- Mentor: CMU SCS Graduate Application Support Program 2024, 2023, 2022, 2020

WORKSHOP PROGRAM COMMITTEE:

- Formal Verification of Machine Learning (ICML 2023)
- In-Context Learning (ICML 2024)
- Learning and Decision Making with Strategic Feedback (NeurIPS 2021)
- Learning in Presence of Strategic Behavior (NeurIPS 2021)
- Mathematics of Modern Machine Learning (NeurIPS 2023)
- Privacy-Preserving Artificial Intelligence (AAAI 2024)
- Trustworthy and Socially Responsible Machine Learning (NeurIPS 2022)

Teaching

Guest Lecturer:

– Foundations of Learning, Game Theory, and Their Connections (Spring 2025). Instructor: Nina Balcan
– Foundations of Operations Management (Fall 2023). Instructor: Sridhar Tayur
– Selected Topics in Applied Statistics (Spring 2024). Instructors: Raaz Dwivedi and Kyra Gan

Teaching Assistant:

– Advanced Topics in Machine Learning Theory (Fall 2022). Instructor: Nina Balcan
– Operations Management (Fall 2023). Instructor: Sridhar Tayur
– Service Management (Fall 2023). Instructor: Sridhar Tayur