

Yahav Bechavod

Postdoctoral Researcher

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Research Interests

I study the foundations of **reliable ML for consequential decision-making**. My work draws on and extends ideas from **machine learning, optimization, and algorithmic game theory**. Through this interdisciplinary lens, I approach reliability balancing theoretical rigor with practical applicability, aiming to build a unified understanding of how ML systems can make sound, equitable, and responsible decisions in complex real-world settings.

Education

Ph.D.	Computer Science, The Hebrew University Dissertation: “Socially Aware Algorithms: Learning, Fairness, and Incentive Awareness” Dissertation Committee: Profs. Aaron Roth, Guy Rothblum, Amit Daniely	2022
M.S.	Computer Science, The Hebrew University Graduated Summa Cum Laude Thesis: “Algorithms for Fairness in Binary Classification” Thesis Advisor: Prof. Katrina Ligett	2018
B.S.	Mathematics and Computer Science (Double Major) The Hebrew University	2015

Grants and Awards

Penn Arts & Sciences AI x Science Fellowship	2024–2026
Apple Seed Grant	2024
Israeli Council for Higher Education Postdoctoral Fellowship	2023–2024
KLA Outstanding Doctoral Research Award	2021
Apple Scholars in AI/ML PhD Fellowship	2020–2022
Charles Clore Foundation PhD Fellowship (declined prize money)	2020–2023

Research Experience

Postdoctoral Researcher , University of Pennsylvania Department of Computer and Information Science Host: Prof. Aaron Roth	2023–present
<ul style="list-style-type: none">• Worked on 5 research projects: published 2 papers in ICML; 2 under review; 1 working paper• Secured Apple Seed Grant funding for a new line of research on fairness in online settings• Mentored PhD students from Roth’s group in various research projects.	

- Developed new frameworks integrating constrained learning and omniprediction with multiple strategic decision makers

Visiting Scholar, Simons Institute (UC Berkeley)

May–July 2019

- Invited participant of the “Algorithmic Fairness” summer cluster.
- Worked with Prof. Steven Wu on a project on individual fairness in online learning.
- Resulting paper was selected as an oral presentation at NeurIPS.

Visiting Student Researcher, University of Pennsylvania

Jul–Oct 2017

- Worked with Prof. Aaron Roth and Prof. Michael Kearns on a project on learning in sequential settings.
- Resulting paper was accepted and presented at NeurIPS.

Service and Leadership

Journal Referee

Journal of Machine Learning Research (JMLR)

Reviewer

International Conference on Machine Learning (ICML) 2022–2024

Conference on Neural Information Processing Systems (NeurIPS) 2021–2024

ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2021

Ethical Reviewer

International Conference on Machine Learning (ICML) 2025

Conference on Neural Information Processing Systems (NeurIPS) 2021–2024

Co-Organizer

December 2021

NeurIPS 2021 Workshop on Learning and Decision-Making
with Strategic Feedback ([StratML’21](#))

- Co-initiated and co-organized the workshop along with Hoda Heidari, Eric Mazumdar, Celestine Mender-Dünner, Tijana Zrnic, and Aaron Roth.
- Co-coordinated the participation of 9 invited speakers and panelists: Francesca Parise, Lillian Ratliff, Nir Rosenfeld, Moritz Hardt, Navin Kartik, Yang Liu, Cristobal Cheyre, Jon Kleinberg, and Steven Wu.
- Oversaw the reviewer recruitment and reviewing process of paper submissions and selection of contributed talks, with 42 peer-reviewed contributed papers presented.
- Co-moderated panel on “Strategic classification and modeling of agent behavior”, with Moritz Hardt, Navin Kartik, and Yang Liu.

Teaching and Mentoring

Teaching Assistant

Fall 2015, Fall 2016

Hebrew University School of Engineering and Computer Science
Class: Introduction to Algorithms (CS67504)

- Graded assignments for approximately 300 students.
- Interacted with students on weekly office hours.
- Held midterm oral examinations.

Teaching Assistant

Spring 2016, 2017

Hebrew University School of Engineering and Computer Science
Class: Introduction to Machine Learning (CS67577)

- Graded assignments for approximately 200 students.
- Interacted with students on weekly office hours.
- Mentored students as part of a class Hackathon.

Graduate Mentor

2018

Advised a Master's student on a project of implementing a practical framework for fair classification. Designed the project and Held weekly mentoring meetings. The work resulted in an open-source Python code available for public use [here](#).

Publications

Working Papers

Oracle-Efficient Learning with Long-Term Constraints

Yahav Bechavod, Aaron Roth
Working Paper, 2025

Work In Submission

Dynamic Regret Bounds for Online Omniprediction with Long-Term Constraints

Yahav Bechavod, Jiuyao Lu, Aaron Roth
Submitted, 2025

Online Omniprediction with Long-Term Constraints

Yahav Bechavod, Jiuyao Lu, Aaron Roth
Submitted, 2025

Preliminary version accepted at NeurIPS 2025 Workshop on Constrained Optimization for Machine Learning

Peer-Reviewed Published Papers

Monotone Individual Fairness

Yahav Bechavod
International Conference on Machine Learning (ICML), 2024

Individually Fair Learning with One-Sided Feedback

Yahav Bechavod, Aaron Roth
International Conference on Machine Learning (ICML), 2023

Information Discrepancy in Strategic Learning

Yahav Bechavod, Chara Podimata, Steven Wu, Juba Ziani
International Conference on Machine Learning (ICML), 2022

Gaming Helps! Learning from Strategic Interactions in Natural Dynamics

Yahav Bechavod, Katrina Ligett, Steven Wu, Juba Ziani

International Conference on Artificial Intelligence and Statistics (AISTATS) 2021

Metric-Free Individual Fairness in Online Learning

Yahav Bechavod, Christopher Jung, Steven Wu

Advances in Neural Information Processing Systems (NeurIPS) 2020

Selected for Oral Presentation (long talk, 1% of submissions)

Equal Opportunity in Online Classification with Partial Feedback

Yahav Bechavod, Katrina Ligett, Aaron Roth, Bo Waggoner, Steven Wu

Advances in Neural Information Processing Systems (NeurIPS) 2019

Penalizing Unfairness in Binary Classification

Yahav Bechavod, Katrina Ligett

Fairness, Accountability, and Transparency 2017

Selected Invited and Contributed Talks

Individual Fairness in Online Classification

- University of Pennsylvania CS Theory Seminar. Philadelphia, PA. February 2023.
- Computation for Fairness (TOC4Fairness) Seminar Series. Virtual. February 2023.

Information Discrepancy in Strategic Learning

- ICML Spotlight Presentation. Baltimore, Maryland. July 2022.

Metric-Free Individual Fairness in Online Learning

- Apple Machine Learning Speaker Series. Virtual. June 2021.
- Symposium on the Foundations of Responsible Computing (FORC). Virtual. June 2021.
- Neural Information Processing Systems (NeurIPS) 2020. Virtual. December 2020.
- Hebrew University Machine Learning Seminar Series. Virtual. February 2020.

An Introduction to Algorithmic Fairness

- Hebrew University Federmann Center for the Study of Rationality. Eilat, Israel. February 2020.

Equal Opportunity in Online Classification with Partial Feedback

- Simons Institute Workshop on Developments in Research on Fairness. Berkeley, California. July 2019.

Poster Presentations

Bechavod, Y. Monotone individual fairness. Poster Presentation. The 41st International Conference on Machine Learning. Vienna, Austria. 2024.

Bechavod, Y. & Roth, A. Individually Fair Learning with One-Sided Feedback. Poster Presentation. The 40th International Conference on Machine Learning. Honolulu, Hawaii. 2023.

Bechavod, Y., Podimata, C., Wu, Z. S., & Ziani, J. Information Discrepancy in Strategic Learning. Poster Presentation. The 39th International Conference on Machine Learning. Baltimore, Maryland. 2022.

Bechavod, Y., Ligett, K., Wu, S., & Ziani, J. Gaming Helps! Learning from Strategic Interactions in Natural Dynamics. Poster Presentation. The 24th International Conference on Artificial Intelligence and Statistics. Virtual. 2021.

Bechavod, Y., Jung, C., & Wu, Z. S. Metric-Free Individual Fairness in Online Learning. Poster Presentation. Advances in Neural Information Processing Systems 33. Virtual. 2020.

Bechavod, Y., Ligett, K., Roth, A., Waggoner, B., & Wu, Z. S. Equal opportunity in online classification with partial feedback. Poster Presentation. Advances in Neural Information Processing Systems 32. Vancouver, Canada. 2019.

Bechavod, Y. & Ligett, K. (2017). Penalizing Unfairness in Binary Classification. Poster Presentation. Fairness, Accountability, and Transparency. Halifax, Canada. 2017.

References

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