

DANIEL HALPERN

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EDUCATION

Harvard University <i>Ph.D. in Computer Science</i> • Advisor: Ariel Procaccia	Cambridge, MA <i>Aug. 2020–Present</i>
University of Toronto <i>B.Sc. in Computer Science with High Distinction</i> • Major GPA: 4.0/4.0, Cumulative GPA: 3.96/4.0	Toronto, ON <i>Sep. 2016–Jun. 2020</i>

SELECTED HONORS AND AWARDS

• Siebel Scholarship	2024
• NSF Graduate Research Fellowship	2021
• University of Toronto Computer Science Undergraduate Research Award	2020
• Harold Willet Stewart Memorial Scholarship	2020
• Anna And Alex Beverly Memorial Fellowship	2020
• Samuel Beatty In Course Scholarship	2019
• C. L. Burton Scholarship For Mathematics and Physical Sciences	2019
• Dr. James A. & Connie P. Dickson Scholarship in Science & Mathematics	2018
• Alan Milne McCombie Scholarship	2017
• University of Toronto President’s Scholars of Excellence Program	2016

JOURNAL ARTICLES

Published

- Tracking Truth in Liquid Democracy.
A. Berinsky, D. Halpern, J. Y. Halpern, A. Jadbabaie, E. Mossel, A. D. Procaccia, and M. Revel.
In *Management Science (MS)*. Forthcoming.

Under Submission

- Dynamic Fair Division with Partial Information.
G. Benadè, D. Halpern, and A. Psomas.
Under Minor Revision at *Operations Research (OR)*.

CONFERENCE PUBLICATIONS

- Axioms for AI Alignment from Human Feedback.
L. Ge, D. Halpern, E. Micha, A. D. Procaccia, I. Shapira, Y. Vorobeychik, and J. Wu.
In *Proceedings of the 38th Conference on Neural Information Processing Systems (NeurIPS)*, 2024.
★ **Spotlight Presentation**
- Computing Voting Rules with Elicited Incomplete Votes.
D. Halpern, S. Hossain, and J. Tucker-Foltz.
In *Proceedings of the 25th ACM Conference on Economics and Computation (EC)*, 2024.
- On the Existence of Envy-Free Allocations Beyond Additive Valuations.
G. Benadè, D. Halpern, A. Psomas, and P. Verma.
In *Proceedings of the 25th ACM Conference on Economics and Computation (EC)*, 2024.
- Metric Distortion with Elicited Pairwise Comparisons.
S. Ebadian, D. Halpern, and E. Micha.
In *Proceedings of the 33rd International Joint Conference on Artificial Intelligence (IJCAI)*, 2024.
- Optimal Engagement-Diversity Tradeoffs in Social Media.
F. Baumman, D. Halpern, I. Rahwan, I. Shapira, A. D. Procaccia, and M. Wüthrich.
In *Proceedings of the 33rd ACM Web Conference (WWW)*, 2024.
- Strategyproof Voting under Correlated Beliefs.
D. Halpern, R. Li, and A. D. Procaccia.
In *Proceedings of the 37th Conference on Neural Information Processing Systems (NeurIPS)*, 2023.
- Smoothed Analysis of Social Choice Revisited.
B. Flanigan, D. Halpern, and A. Psomas.
In *Proceedings of the 19th Conference on Web and Internet Economics (WINE)*, 2023.

12. In Defense of Liquid Democracy.
D. Halpern, J. Y. Halpern, A. Jadbabaie, E. Mossel, A. D. Procaccia, and M. Revel.
In *Proceedings of the 24th ACM Conference on Economics and Computation (EC)*, 2023.
11. Representation with Incomplete Votes.
D. Halpern, G. Kehne, A. D. Procaccia, J. Tucker-Foltz, and M. Wüthrich.
In *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
10. Dynamic Fair Division with Partial Information.
G. Benadè, D. Halpern, and A. Psomas.
In *Proceedings of the 36th Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
9. Liquid Democracy in Practice: An Empirical Analysis of its Epistemic Performance.
M. Revel, D. Halpern, A. Berinsky, and A. Jadbabaie.
In *Proceedings of the 2nd ACM conference on Equity and Access in Algorithms, Mechanisms, Optimization (EAAMO)*, 2022.
8. Distortion in Voting with Top-t Preferences.
A. Borodin, D. Halpern, M. Latifian, and N. Shah.
In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI)*, 2022.
7. Can Buyers Reveal for a Better Deal?.
D. Halpern, G. Kehne, and J. Tucker-Foltz.
In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI)*, 2022.
6. How Many Representatives Do We Need? The Optimal Size of an Epistemic Congress.
M. Revel, T. Lin, and D. Halpern.
In *Proceedings of the 36th AAAI Conference on Artificial Intelligence (AAAI)*, 2022.
5. Fair and Efficient Resource Allocation with Partial Information.
D. Halpern and N. Shah.
In *Proceedings of the 30th International Joint Conference on Artificial Intelligence (IJCAI)*, 2021.
4. Aggregating Binary Judgments Ranked By Accuracy.
D. Halpern, G. Kehne, D. Peters, A. D. Procaccia, N. Shah, and P. Skowron.
In *Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI)*, 2021.
3. Fair Division with Binary Valuations: One Rule to Rule Them All.
D. Halpern, A. D. Procaccia, A. Psomas, and N. Shah.
In *Proceedings of the 16th Conference on Web and Internet Economics (WINE)*, 2020.
2. Resolving the Optimal Metric Distortion Conjecture.
V. Gkatzelis, D. Halpern, and N. Shah.
In *Proceedings of the 61st Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, 2020.
★ **Invited to the EC 2021 plenary session: Highlights Beyond EC**
1. Fair Division with Subsidy.
D. Halpern and N. Shah.
In *Proceedings of the 12th International Symposium on Algorithmic Game Theory (SAGT)*, 2019.

WORKING PAPERS

2. D. Halpern, A. D. Procaccia, E. Shapiro, and N. Talmon. Federated Assemblies.
1. D. Halpern, A. D. Procaccia, and W. Suksompong. The Proportional Veto Principle for Approval Ballots.

TEACHING EXPERIENCE

GEC Academy

Teaching Fellow

- Mathematics for Economics

Online

Summer 2024

Harvard University

Teaching Fellow

- Optimized Democracy (CS238)

Cambridge, MA

Spring 2022

University of Toronto

Undergraduate Teaching Assistant

- Data Structures and Analysis (CSC263)
- Algorithm Design, Analysis & Complexity (CSC373)

Toronto, ON

Spring 2020

SERVICE

PC Member: AAAI ('23, '24, '25), IJCAI ('23, '24), SAGT ('23), NeurIPS ('24)

Journal Reviewer: ARTINT ('21, '22, '24), JAAMAS ('21, '21, '21, '22), MOR ('22, '23), MSS ('21, '22, '23)

Subreviewer: AAMAS ('25), EAAMO ('22), SAGT ('21), SODA ('24)

INVITED TALKS

FOCS Workshop on Distortion in Social Choice <i>Optimal Randomized Utilitarian Distortion</i>	October, 2024
University of Chicago Computer Science Colloquium <i>Aggregating Preferences with Limited Queries</i>	October, 2024
Carnegie Mellon Formal Epistemology Lecture Series <i>Aggregating Preferences with Limited Queries</i>	September, 2024
Oxford Algorithmic Game Theory Seminar <i>Computing Voting Rules with Elicited Incomplete Votes</i>	June, 2024
MSRI/SLMath Social Choice Seminar <i>Resolving the Optimal Metric Distortion Conjecture</i>	November, 2023
HalpernFest at Cornell University <i>In Defense of Liquid Democracy</i>	June, 2023
McGill Bellairs Workshop on Multi-Agent Systems <i>Representation with Incomplete Votes</i>	March, 2023
COMSOC Video Seminar <i>Representation with Incomplete Votes</i>	February, 2023
LAMSADE Mini-Workshop on Cooperative Games, Social Choice, and Fair Division <i>In Defense of Liquid Democracy</i>	September, 2022
Highlights Beyond EC <i>Resolving the Optimal Metric Distortion Conjecture</i>	July, 2021
Drexel Theory Seminar <i>Fair and Efficient Resource Allocation with Partial Information</i>	May, 2021
Cornell Theory Seminar <i>Resolving the Optimal Metric Distortion Conjecture</i>	November, 2020
Harvard EconCS Seminar <i>Resolving the Optimal Metric Distortion Conjecture</i>	September, 2020

WORK EXPERIENCE

Carnegie Mellon University <i>Research Intern</i> <ul style="list-style-type: none">• Advisor: Ariel D. Procaccia	Pittsburgh, PA <i>Jun. 2019–Aug. 2019</i>
CryptoNumerics <i>Software Developer</i> <ul style="list-style-type: none">• Startup focused on machine learning and cryptography.	Toronto, ON <i>Apr. 2018–Jul. 2020</i>

REFERENCES

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