

DANIEL HALPERN

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EDUCATION

Harvard University

Ph.D. in Computer Science

- Advisor: Ariel D. Procaccia

Cambridge, MA

Aug. 2020–Present

University of Toronto

B.Sc. in Computer Science with High Distinction

- Major GPA: 4.0/4.0, Cumulative GPA: 3.96/4.0

Toronto, ON

Sep. 2016–Jun. 2020

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

(α): alphabetical author order

J2. Dynamic Fair Division with Partial Information.

(α) G. Benadè, D. Halpern, and A. Psomas.

In *Operations Research (OR)*. Forthcoming.

J1. Tracking Truth in Liquid Democracy.

(α) A. Berinsky, D. Halpern, J. Y. Halpern, A. Jadbabaie, E. Mossel, A. D. Procaccia, and M. Revel.

In *Management Science (MS)*. Forthcoming.

CONFERENCE PUBLICATIONS

(α): alphabetical author order, (r): random author order

C19. Axioms for AI Alignment from Human Feedback.

(α) 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 (2.1% of submissions)**

C18. Computing Voting Rules with Elicited Incomplete Votes.

(α) D. Halpern, S. Hossain, and J. Tucker-Foltz.

In *Proceedings of the 25th ACM Conference on Economics and Computation (EC)*, 2024.

C17. On the Existence of Envy-Free Allocations Beyond Additive Valuations.

(α) G. Benadè, D. Halpern, A. Psomas, and P. Verma.

In *Proceedings of the 25th ACM Conference on Economics and Computation (EC)*, 2024.

C16. Metric Distortion with Elicited Pairwise Comparisons.

(α) S. Ebadian, D. Halpern, and E. Micha.

In *Proceedings of the 33rd International Joint Conference on Artificial Intelligence (IJCAI)*, 2024.

C15. Optimal Engagement-Diversity Tradeoffs in Social Media.

(α) F. Baumann, D. Halpern, I. Rahwan, I. Shapira, A. D. Procaccia, and M. Wüthrich.

In *Proceedings of the 33rd ACM Web Conference (WWW)*, 2024.

C14. Strategyproof Voting under Correlated Beliefs.

(α) D. Halpern, R. Li, and A. D. Procaccia.

In *Proceedings of the 37th Conference on Neural Information Processing Systems (NeurIPS)*, 2023.

C13. Smoothed Analysis of Social Choice Revisited.

(α) B. Flanigan, D. Halpern, and A. Psomas.

In *Proceedings of the 19th Conference on Web and Internet Economics (WINE)*, 2023.

- C12. In Defense of Liquid Democracy.
(α) 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.
- C11. Representation with Incomplete Votes.
(α) 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.
- C10. Dynamic Fair Division with Partial Information.
(α) G. Benadè, D. Halpern, and A. Psomas.
In *Proceedings of the 36th Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
- C9. 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.
- C8. Distortion in Voting with Top-t Preferences.
(α) A. Borodin, D. Halpern, M. Latifian, and N. Shah.
In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI)*, 2022.
- C7. Can Buyers Reveal for a Better Deal?.
(α) D. Halpern, G. Kehne, and J. Tucker-Foltz.
In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI)*, 2022.
- C6. How Many Representatives Do We Need? The Optimal Size of an Epistemic Congress.
(r) M. Revel, T. Lin, and D. Halpern.
In *Proceedings of the 36th AAAI Conference on Artificial Intelligence (AAAI)*, 2022.
- C5. Fair and Efficient Resource Allocation with Partial Information.
(α) D. Halpern and N. Shah.
In *Proceedings of the 30th International Joint Conference on Artificial Intelligence (IJCAI)*, 2021.
- C4. Aggregating Binary Judgments Ranked By Accuracy.
(α) 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.
- C3. Fair Division with Binary Valuations: One Rule to Rule Them All.
(α) D. Halpern, A. D. Procaccia, A. Psomas, and N. Shah.
In *Proceedings of the 16th Conference on Web and Internet Economics (WINE)*, 2020.
- C2. Resolving the Optimal Metric Distortion Conjecture.
(α) 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
- C1. Fair Division with Subsidy.
(α) D. Halpern and N. Shah.
In *Proceedings of the 12th International Symposium on Algorithmic Game Theory (SAGT)*, 2019.

WORKING PAPERS

- W2. Federated Assemblies.
D. Halpern, A. D. Procaccia, E. Shapiro, and N. Talmon.
- W1. The Proportional Veto Principle for Approval Ballots.
D. Halpern, A. D. Procaccia, and W. Suksompong.

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 Research Intern • Advisor: Ariel D. Procaccia	Pittsburgh, PA Jun. 2019–Aug. 2019
CryptoNumerics Software Developer • Startup focused on machine learning and cryptography.	Toronto, ON Apr. 2018–Jul. 2020

REFERENCES

Ariel D. Procaccia
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Ali Jadbabaie
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Purdue University
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