

DANIEL HALPERN

150 Western Ave, Allston, MA, 02134 | +1 (607) 227-4045 | dhalpern@g.harvard.edu | <https://daniel-halpern.com>

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
Gordon McKay Professor of Computer Science
Harvard University
Science and Engineering Complex, Room 5.411
150 Western Ave, Allston, MA 02134
arielpro@seas.harvard.edu

Nisarg Shah
Associate Professor of Computer Science
University of Toronto
Sandford Fleming Building, Room 3312
10 King's College Rd, Toronto, ON M5S 3G4
nisarg@cs.toronto.edu

Ali Jadbabaie
JR East Professor of Engineering
Massachusetts Institute of Technology
Department of Civil and Environmental Engineering, Room 1-181
77 Massachusetts Avenue, Cambridge, MA 02139
jadbabai@mit.edu

Alexandros Psomas

Assistant Professor of Computer Science
Purdue University
Hall of Data Science and AI, Room 2144
475 Stadium Mall Dr, West Lafayette, IN 47907
apsomas@cs.purdue.edu

Yevgeniy Vorobeychik

Professor of Computer Science
Washington University in Saint Louis
McKelvey Hall, Room 3036
One Brookings Drive, St. Louis, MO 63130
yvorobeychik@wustl.edu