DANIEL HALPERN

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EDUCATION

Harvard University — **Cambridge, MA**
Ph.D. in Computer Science — *August 2020 to Present*
- Advisor: Ariel Procaccia

University of Toronto — **Toronto, ON**
B.Sc. in Computer Science with High Distinction — *September 2016 to June 2020*
- Major GPA: 4.0/4.0, Cumulative GPA: 3.96/4.0

AWARDS

- *Selected for the 9th Heidelberg Laureate Forum* 2022
- ***National Science Foundation 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

PUBLICATIONS

19. S. Ebadian, D. Halpern, and E. Micha. Metric Distortion with Elicited Pairwise Comparisons. Working Paper.
18. D. Halpern, A. D. Procaccia, and W. Suksompong. The Proportional Veto Principle for Approval Ballots. Working Paper.
17. G. Benadè, D. Halpern, A. Psomas, and P. Verma. On the Existence of Envy-Free Allocations Beyond Additive Valuations. Working Paper.
16. F. Baumman, D. Halpern, I. Rahwan, I. Shapira, A. D. Procaccia, and M. Wüthrich. Optimal Engagement-Diversity Tradeoffs in Social Media. Working Paper.
15. D. Halpern and A. D. Procaccia. Unbiased Information Packets. Working Paper.
14. D. Halpern, R. Li, and A. D. Procaccia. Strategyproof Voting under Correlated Beliefs. In *Proceedings of the 37th Conference on Neural Information Processing Systems (**NeurIPS**)*, 2023. Forthcoming.
13. B. Flanigan, D. Halpern, and A. Psomas. Smoothed Analysis of Social Choice Revisited. In *Proceedings of the 19th Conference on Web and Internet Economics (**WINE**)*, 2023. Forthcoming.
12. D. Halpern, J. Y. Halpern, A. Jadbabaie, E. Mossel, A. D. Procaccia, and M. Revel. In Defense of Liquid Democracy. In *Proceedings of the 24th ACM Conference on Economics and Computation (**EC**)*, pp. 852, 2023.
11. D. Halpern, G. Kehne, A. D. Procaccia, J. Tucker-Foltz, and M. Wüthrich. Representation with Incomplete Votes. In *Proceedings of the 37th AAAI Conference on Artificial Intelligence (**AAAI**)*, pp. 5657–5664, 2023.
10. G. Benadè, D. Halpern, and A. Psomas. Dynamic Fair Division with Partial Information. In *Proceedings of the 36th Conference on Neural Information Processing Systems (**NeurIPS**)*, pp. 3703–3715, 2022.
9. M. Revel, D. Halpern, A. Berinsky, and A. Jadbabaie. Liquid Democracy in Practice: An Empirical Analysis of its Epistemic Performance. In *Proceedings of the 2nd ACM conference on Equity and Access in Algorithms, Mechanisms, Optimization (**EAAMO**)*, 2022.
8. A. Borodin, D. Halpern, M. Latifian, and N. Shah. Distortion in Voting with Top-t Preferences. In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (**IJCAI**)*, pp. 116–122, 2022.
7. D. Halpern, G. Kehne, and J. Tucker-Foltz. Can Buyers Reveal for a Better Deal?. In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (**IJCAI**)*, pp. 314–320, 2022.
6. M. Revel, T. Lin, and D. Halpern. How Many Representatives Do We Need? The Optimal Size of an Epistemic Congress. In *Proceedings of the 36th AAAI Conference on Artificial Intelligence (**AAAI**)*, pp. 9431–9438, 2022.
5. D. Halpern and N. Shah. Fair and Efficient Resource Allocation with Partial Information. In *Proceedings of the 30th International Joint Conference on Artificial Intelligence (**IJCAI**)*, pp. 224–230, 2021.

4. D. Halpern, G. Kehne, D. Peters, A. D. Procaccia, N. Shah, and P. Skowron. Aggregating Binary Judgments Ranked By Accuracy. In *Proceedings of the 35th AAAI Conference on Artificial Intelligence (**AAAI**)*, pp. 5456–5463, 2021.
3. D. Halpern, A. D. Procaccia, A. Psomas, and N. Shah. Fair Division with Binary Valuations: One Rule to Rule Them All. In *Proceedings of the 16th Conference on Web and Internet Economics (**WINE**)*, pp. 370–383, 2020.
2. V. Gkatzelis, D. Halpern, and N. Shah. Resolving the Optimal Metric Distortion Conjecture. In *Proceedings of the 61st Annual IEEE Symposium on Foundations of Computer Science (**FOCS**)*, pp. 1427–1438, 2020.
1. D. Halpern and N. Shah. Fair Division with Subsidy. In *Proceedings of the 12th International Symposium on Algorithmic Game Theory (**SAGT**)*, pp. 374–389, 2019.

WORK EXPERIENCE

Carnegie Mellon University — **Pittsburgh, PA**
Research Intern — *June 2019 - August 2019*
- Worked with Professor Ariel Procaccia
- Research in topics related to Algorithmic Game Theory

CryptoNumerics — **Toronto, ON**
Software Developer — *April 2018 - July 2020*
- One of the first employees at start up working on machine learning and cryptography
- Leader of several projects in Python, Java, and Javascript

TEACHING EXPERIENCE

Harvard University — **Cambridge, MA**
Teaching Fellow — *Spring 2022*
- Optimized Democracy (CS238)

University of Toronto — **Toronto, ON**
Undergraduate Teaching Assistant — *Spring 2020*
- Data Structures and Analysis (CSC263)

University of Toronto — **Toronto, ON**
Undergraduate Teaching Assistant — *Spring 2020*
- Algorithm Design, Analysis & Complexity (CSC373)

SERVICE

PC Member: AAAI ('23), IJCAI ('23), SAGT ('23)
Journal Reviewer: ARTINT ('21, '22), JAAMAS ('21, '21, '21, '22), MSS ('21, '22, '23)
Subreviewer: EAAMO ('22), SAGT ('21), SODA ('24)

INVITED TALKS

Representation with Incomplete Votes
- INFORMS — October, 2023
- Bellairs Workshop on Multi-Agent Systems — March, 2023
- COMSOC Video Seminar — February, 2023

In Defense of Liquid Democracy
- LAMSADE Mini-Workshop on Cooperative Games, Social Choice, and Fair Division — September, 2022

Fair and Efficient Resource Allocation with Incomplete Votes
- Drexel Theory Seminar — May, 2021

Resolving the Optimal Metric Distortion Conjecture
- MSRI Social Choice Seminar — November, 2023
- Highlights Beyond EC — July, 2021
- Cornell Theory Seminar — November, 2020
- Harvard EconCS Seminar — September, 2020