

# ANSON KAHNG

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## RESEARCH INTERESTS

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Computational Social Choice, Theoretical Computer Science, Artificial Intelligence, Economics.

## ACADEMIC POSITIONS

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**University of Rochester**, Rochester, NY *July 2022 - Present*  
Assistant Professor in Computer Science (CS) and Data Science (GIDS)

**University of Toronto**, Toronto, ON *August 2021 - August 2022*  
Postdoctoral Fellow in Computer Science  
Advisor: Nisarg Shah

## EDUCATION

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**Carnegie Mellon University**, Pittsburgh, PA *August 2016 - August 2021*  
Ph.D. in Computer Science  
Advisor: Ariel Procaccia

**Harvard University**, Cambridge, MA *August 2012 - May 2016*  
Bachelor of Arts in Computer Science, *cum laude*  
Advisor: David Parkes

## INDUSTRY EXPERIENCE

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**Microsoft Research**, New York, NY *May 2019 - August 2019*  
*Graduate Research Intern*  
Supervised by David Pennock and Rupert Freeman. Worked on multi-winner elections and pari-mutuel wagering mechanisms.

**Google**, Mountain View, CA *June 2014 - August 2014*  
*Software Engineering Intern*  
Worked on datacenter software and repairs accuracy. Ran large-scale data mining and developed machine learning algorithms on fleet-wide datacenter statistics.

## JOURNAL PUBLICATIONS

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( $\alpha$ ): alphabetical author ordering

**Optimized Distortion and Proportional Fairness in Voting** *TEAC 2023*  
( $\alpha$ ) Soroush Ebadian, Anson Kahng, Dominik Peters, and Nisarg Shah  
*ACM Transactions on Economics and Computation (TEAC)*  
*Supersedes EC 2022*

**High-Throughput Cryo-ET Structural Pattern Mining by Unsupervised Deep Iterative Subtomogram Clustering** *PNAS 2023*  
Xiangrui Zeng, Anson Kahng, Liang Xue, Julia Mahamid, Yi-Wei Chang, and Min Xu  
*Proceedings of the National Academy of Sciences (PNAS)*

**Liquid Democracy: An Algorithmic Perspective** *JAIR 2021*  
( $\alpha$ ) Anson Kahng, Simon Mackenzie, and Ariel D. Procaccia  
*Journal of Artificial Intelligence Research (JAIR)*  
*Supersedes AAI 2018*

**The Fluid Dynamics of Liquid Democracy** *TEAC 2021*  
( $\alpha$ ) Paul Gözl, Anson Kahng, Simon Mackenzie, and Ariel D. Procaccia

**WeBuildAI:**

*CSCW 2019*

**Participatory Framework for Fair and Efficient Algorithmic Governance**

Min Kyung Lee, Daniel Kusbit, Anson Kahng, Ji Tae Kim, Xinran Yuan, Allissa Chan, Ritesh Noothigattu, Daniel See, Siheon Lee, Alex Psomas, and Ariel D. Procaccia  
*Computer Supported Cooperative Work (CSCW)*

**CONFERENCE PUBLICATIONS**

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( $\alpha$ ): alphabetical author ordering

**Sampling Winners in Ranked Choice Voting**

*IJCAI 2024*

( $\alpha$ ) Matthew Iceland, Anson Kahng, and Joseph Saber  
*33rd International Joint Conference on Artificial Intelligence (IJCAI-24)*

**Voting with Preference Intensities**

*AAAI 2023*

( $\alpha$ ) Anson Kahng, Mohamad Latifian, and Nisarg Shah  
*37th AAAI Conference on Artificial Intelligence (AAAI-23)*

**Optimized Distortion and Proportional Fairness in Voting**

*EC 2022*

( $\alpha$ ) Soroush Ebadian, Anson Kahng, Dominik Peters, and Nisarg Shah  
*23rd ACM Conference on Economics and Computation (EC-22)*

**Worst-Case Voting When the Stakes Are High**

*AAAI 2022*

( $\alpha$ ) Anson Kahng and Gregory Kehne  
*36th AAAI Conference on Artificial Intelligence (AAAI-22)*

**District-Fair Participatory Budgeting**

*AAAI 2021*

( $\alpha$ ) D Ellis Hershkowitz, Anson Kahng, Dominik Peters, and Ariel D. Procaccia  
*35th AAAI Conference on Artificial Intelligence (AAAI-21)*

**Mean Estimation from Multiple-Choice Questions**

*ICML 2020*

( $\alpha$ ) Anson Kahng, Gregory Kehne, and Ariel D. Procaccia  
*37th International Conference on Machine Learning (ICML-20)*

**Proportionality in Approval-Based Elections With a Variable Number of Winners**

*IJCAI 2020*

( $\alpha$ ) Rupert Freeman, Anson Kahng, and David M. Pennock  
*29th International Joint Conference on Artificial Intelligence (IJCAI-20)*

**HirePeer:**

*AAAI 2020*

**Impartial Peer-Assessed Hiring at Scale in Expert Crowdsourcing Markets**

Yasmine Kotturi, Anson Kahng, Ariel D. Procaccia, and Chinmay Kulkarni  
*34th AAAI Conference on Artificial Intelligence (AAAI-20)*

**Computationally-Aware Data Aggregation**

*ITCS 2020*

( $\alpha$ ) Bernhard Haeupler, D Ellis Hershkowitz, Anson Kahng, and Ariel D. Procaccia  
*11th Innovations in Theoretical Computer Science (ITCS-20)*

**Paradoxes in Fair Machine Learning**

*NeurIPS 2019*

( $\alpha$ ) Paul Gözl, Anson Kahng, and Ariel D. Procaccia  
*NeurIPS Spotlight Presentation (2.5% of submissions)*  
*33rd Conference on Neural Information Processing (NeurIPS-19)*

**Statistical Foundations of Virtual Democracy**

*ICML 2019*

( $\alpha$ ) Anson Kahng, Min Kyung Lee, Ritesh Noothigattu, Ariel D. Procaccia, and Alex Psomas  
*36th International Conference on Machine Learning (ICML-19)*

<b>The Fluid Dynamics of Liquid Democracy</b> ( $\alpha$ ) Paul Gözl, Anson Kahng, Simon Mackenzie, and Ariel D. Procaccia <i>14th Conference on Web and Internet Economics (WINE-18)</i>	<i>WINE 2018</i>
<b>Liquid Democracy: An Algorithmic Perspective</b> ( $\alpha$ ) Anson Kahng, Simon Mackenzie, and Ariel D. Procaccia <i>32nd AAAI Conference on Artificial Intelligence (AAAI-18)</i>	<i>AAAI 2018</i>
<b>Ranking Wily People Who Rank Each Other</b> ( $\alpha$ ) Anson Kahng, Yasmine Kotturi, Chinmay Kulkarni, David Kurokawa, and Ariel D. Procaccia <i>32nd AAAI Conference on Artificial Intelligence (AAAI-18)</i>	<i>AAAI 2018</i>
<b>Making Right Decisions Based on Wrong Opinions</b> ( $\alpha$ ) Gerdus Benadè, Anson Kahng, and Ariel D. Procaccia <i>18th ACM Conference on Economics and Computation (EC-17)</i>	<i>EC 2017</i>

## THESES

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<b>Computational Perspectives on Democracy</b> <i>Carnegie Mellon University PhD Thesis</i> Advised by Ariel Procaccia	<i>2021</i>
<b>Timing Objectives in Dynamic Kidney Exchange</b> <i>Harvard College Undergraduate Honors Thesis</i> Advised by David Parkes	<i>2016</i>

## GRANTS

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<b>UR GIDS Seed Funding Award</b> \$20,000	<i>2024 - 2025</i>
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## TEACHING

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<b>CSC 289/489: Algorithmic Game Theory</b> University of Rochester <i>Instructor</i>	<i>Spring 2024</i>
<b>DSCC/CSC 462: Computational Introduction to Statistics</b> University of Rochester <i>Instructor</i>	<i>Fall 2023</i>
<b>CSC 289/489: Algorithmic Game Theory</b> University of Rochester <i>Instructor</i>	<i>Spring 2023</i>
<b>DSCC/CSC 462: Computational Introduction to Statistics</b> University of Rochester <i>Instructor</i>	<i>Fall 2022</i>
<b>Diversity, Equity, and Inclusion in Computer Science and Society (15-996B)</b> Carnegie Mellon, Pilot Course <i>Discussion Moderator and Graduate Teaching Assistant</i>	<i>Spring 2021</i>
<b>Truth, Justice, and Algorithms (15-896)</b> , Carnegie Mellon <i>Graduate Teaching Assistant</i>	<i>Fall 2018</i>
<b>Graduate Artificial Intelligence (15-780)</b> , Carnegie Mellon <i>Graduate Teaching Assistant</i>	<i>Spring 2017</i>

## SERVICE

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### Conference PC Member

*NeurIPS-24 (Area Chair), EAAMO-24, EC-24, IJCAI-24, FAccT-24, AAMAS-24, NeurIPS-23, EAAMO-23, EC-23, AAAI-23, AAMAS-22, EAAMO-22, EC-22, IJCAI-22, NeurIPS-22, AAAI-22, EAAMO-21, EC-21, ICML-21, IJCAI-21 (SPC), AAAI-21, NeurIPS-20, ICML-20, AAAI-20, SAGT-19*

### Journal Reviews

*ACM Transactions on Economics and Computation (TEAC), Games and Economic Behavior (GEB), Artificial Intelligence Journal (AIJ), Social Choice and Welfare (SCW)*

### UR Computer Science Seminar Chair

*Organized a weekly computer science department seminar.*

*Fall 2023 - Spring 2024*

### UR GIDS Faculty Search Committee Member

*Member of the faculty search committee for computational social science.*

*Fall 2023 - Spring 2024*

### UR GIDS Masters Admissions Committee Member

*Member of the masters admissions committee for the Goergen Institute of Data Science.*

*Spring 2023, Spring 2024*

### UR Computer Science Publicity Committee Member

*Member of the publicity committee for the computer science doctoral program.*

*Fall 2023 - Spring 2024*

### UR Computer Science Seminar Committee Member

*Member of the seminar committee for the weekly computer science department seminar.*

*Fall 2022 - Spring 2023*

### CMU CSD DEI Working Group

*Member of working group designing a mandatory course on DEI for all CSD PhD students.  
Received the CMU SCS Graduate Student Service Award in 2022.*

*September 2020 - August 2021*

### EAAMO Bridges (formerly Mechanism Design for Social Good)

*Civic Participation working group leader (with Paul Gözl)  
Member of the Online Labor Markets and Bias working groups*

*June 2018 - Present*

*September 2020 - May 2022*

*June 2018 - September 2020*

### Harvard EconCS Seminar Organizer

*Joint with Mark York*

*September 2020 - June 2021*

### Data Analysis Chair

*EC-20*

*February 2020 - June 2020*

### Speakers Club, Carnegie Mellon University

*Graduate Student Member  
Evaluate PhD students' speaking skills requirements.*

*March 2019 - August 2021*

### CSD Doctoral Review Committee, Carnegie Mellon University

*Graduate Student Member  
Selected as a member of the Computer Science Department's doctoral program advisory committee.*

*November 2017 - August 2021*

### CSD Ph.D. Mentor, Carnegie Mellon University

*Graduate Student Mentor  
Mentor junior Ph.D. students in the Computer Science Department.*

*September 2017 - August 2021*

### Random Distance Run Organizer

*Organize an annual ~50-person track race for CMU's School of Computer Science.*

*April 2017 - April 2021*

### Hack Harvard Organizer

*January 2015 - November 2015*

Organized the first annual Hack Harvard, with 500+ participants, \$25,000+ in sponsorship, and over 2,000 pounds of sponsored merchandise.

## TALKS

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### **Automating Ethical Decision-Making with Virtual Democracy**

*Brown CS Theory Seminar*

*May 2024*

### **Democra-CS: Computational Perspectives on Democracy**

*JMM: Mathematical Foundations of Democracy*

*January 2023*

*UR-RIT Theory Canal*

*November 2022*

*URCS Colloquium*

*September 2022*

### **District-Fair Participatory Budgeting**

*AAAI '21 Presentation*

*February 2021*

*Harvard EconCS Seminar*

*September 2020*

### **Proportionality in Approval-Based Elections With a Variable Number of Winners**

*IJCAI '20 Presentation*

*January 2021*

*GAIW workshop at AAMAS '20*

*May 2020*

### **Statistical Foundations of Virtual Democracy**

*University of Toronto, Theory Lunch*

*April 2022*

*CU Boulder, Guest lecture in CSCI 7000: Topics in Algorithmic Game Theory*

*February 2020*

*ICML '19 Presentation*

*June 2019*

*Computational Sustainability Open Graduate Seminar*

*April 2019*

*Carnegie Mellon University, AI Seminar*

*March 2019*

### **Paradoxes in Fair Machine Learning**

*MD4SG Bias Working Group*

*January 2020*

*NeurIPS '19 Spotlight Presentation (2.5% of submissions)*

*December 2019*

### **Incentivizing Effort in Impartial Ranking**

*MD4SG Online Labor Markets Working Group*

*November 2018*

### **Liquid Democracy: An Algorithmic Perspective**

*AAAI '18 Presentation*

*January 2018*

### **Impartial Rank Aggregation**

*AAAI '18 Presentation*

*January 2018*

*Carnegie Mellon University, AI Seminar*

*December 2017*

### **Making Right Decisions Based on Wrong Opinions**

*EC '17 Presentation*

*June 2017*