RUPERT FREEMAN

University of Virginia Darden School of Business
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APPOINTMENTS

University of Virginia Darden School of Business 2020-present
Assistant Professor
Quantitative Analysis Group

Microsoft Research 2018-2020
Postdoctoral Researcher
NYC Algorithmic Economics Group

EDUCATION

Ph.D. in Computer Science 2013-2018
Duke University
Advisor: Vincent Conitzer

Bachelor of Science (First Class Honours) in Mathematics 2009-2012
University of Auckland, New Zealand

RESEARCH INTERNSHIPS AND VISITS

Microsoft Research, NYC Summer 2016, 2017
Research Intern

Simons Institute for the Theory of Computing Fall 2015
Visiting student as part of the program on Economics and Computation

FELLOWSHIPS AND AWARDS

Duke Computer Science Department Outstanding Dissertation Award 2018
Facebook Fellowship 2017-2019
IBM Ph.D. Fellowship (Declined in order to accept Facebook award) 2017-2018
Duke Computer Science Department Outstanding Preliminary Exam Award 2016
Duke Computer Science Department Outstanding Teaching Assistant Award 2014

JOURNAL PUBLICATIONS

Rupert Freeman, David M. Pennock, Dominik Peters, and Jennifer Wortman Vaughan. *Truthful Aggregation of Budget Proposals.* Journal of Economic Theory. (Supersedes the EC-19 paper below)

Haris Aziz, Markus Brill, Vincent Conitzer, Edith Elkind, Rupert Freeman, and Toby Walsh. *Justified Representation in Approval-Based Committee Voting.* In Social Choice and Welfare. (Supersedes the AAAI-15 paper below)

PEER-REVIEWED CONFERENCE PUBLICATIONS

Rupert Freeman, David M. Pennock, Chara Podimata, and Jennifer Wortman Vaughan. *No-Regret and Incentive-Compatible Online Learning.* In Proceedings of the Thirty-Seventh International Conference on Machine Learning (ICML-20), virtual, 2020.

Rupert Freeman, Nisarg Shah, and Rohit Vaish. *Best of Both Worlds: Ex-ante and Ex-Post Fairness in Resource Allocation.* In Proceedings of the 21st ACM Conference on Economics and Computation (EC-20), virtual, 2020.

Rupert Freeman, Anson Kahng, and David M. Pennock. *Representation in Approval Elections with a Variable Number of Winners.* In Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence (IJCAI-20), virtual, 2020.

Rupert Freeman, Sujoy Sikdar, Rohit Vaish, and Lirong Xia. *Equitable Allocations of Indivisible Chores.* In Proceedings of the Nineteenth International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS-20), virtual, 2020.

Rupert Freeman, David M. Pennock, Dominik Peters, and Bo Waggoner. *Preventing Arbitrage from Collusion when Eliciting Probabilities.* In Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20), New York City, New York, USA, 2020.

Rupert Freeman, Sujoy Sikdar, Rohit Vaish, and Lirong Xia. *Equitable Allocations of Indivisible Goods.* In Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence (IJCAI-19), Macao, China, 2019.

Rupert Freeman, David M. Pennock, Dominik Peters, and Jennifer Wortman Vaughan. *Truthful Aggregation of Budget Proposals.* In Proceedings of the 20th ACM Conference on Economics and Computation (EC-19), Pheonix, Arizona, USA, 2019.

Rupert Freeman, David M. Pennock, and Jennifer Wortman Vaughan. *An Equivalence Between Wagering and Fair-Division Mechanisms.* In Proceedings of the Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19), Honolulu, Hawaii, USA, 2019.

Vincent Conitzer, Rupert Freeman, Nisarg Shah, and Jennifer Wortman Vaughan. *Group Fairness for the Allocation of Indivisible Goods.* In Proceedings of the Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19), Honolulu, Hawaii, USA, 2019.

Rupert Freeman and David M. Pennock. *An Axiomatic View of the Parimutuel Consensus Wagering Mechanism.* In Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI-18), Stockholm, Sweden, 2018.

Rupert Freeman, Seyed Majid Zahedi, Vincent Conitzer, and Benjamin Lee. *Dynamic Proportional Sharing: A Game-Theoretic Approach.* In Proceedings of the ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems, Irvine, California, USA, 2018.

Jens Witkowski, Rupert Freeman, Jennifer Wortman Vaughan, David M. Pennock, and Andreas Krause. *Incentive-Compatible Forecasting Competitions.* In Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18), New Orleans, Louisiana, USA, 2018.

Rupert Freeman, Seyed Majid Zahedi, and Vincent Conitzer. *Fair and Efficient Social Choice in Dynamic Settings.* In Proceedings of the Twenty-Sixth International Joint Conference on Artificial Intelligence (IJCAI-17), Melbourne, Australia, 2017.

Vincent Conitzer, Rupert Freeman, and Nisarg Shah. *Fair Public Decision Making.* In Proceedings of the 18th ACM Conference on Economics and Computation (EC-17), Cambridge, Massachusetts, USA, 2017.

Rupert Freeman, David M. Pennock, and Jennifer Wortman Vaughan. *The Double Clinching Auction for Wagering.* In Proceedings of the 18th ACM Conference on Economics and Computation (EC-17), Cambridge, Massachusetts, USA, 2017.

Rupert Freeman, Sébastien Lahaie, and David Pennock. *Crowdsourced Outcome Determination in Prediction Markets.* In Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI-17), San Francisco, California, USA, 2017.

Markus Brill, Rupert Freeman, Svante Janson, and Martin Lackner. *Phragmén's Voting Methods and Justified Representation.* In Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI-17), San Francisco, California, USA, 2017.

Rupert Freeman, Sam Haney, and Debmalya Panigrahi. *On the Price of Stability of Undirected Multicast Games.* In Proceedings of the Twelfth Conference on Web and Internet Economics (WINE-16), Montreal, Canada, 2016.

Haifeng Xu, Rupert Freeman, Vincent Conitzer, Shaddin Dughmi, and Milind Tambe. *Signaling in Bayesian Stackelberg Games.* In Proceedings of the Fifteenth International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS-16), Singapore, 2016.

Markus Brill, Vincent Conitzer, Rupert Freeman, and Nisarg Shah. *False-Name-Proof Recommendations in Social Networks.* In Proceedings of the Fifteenth International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS-16), Singapore, 2016.

Vincent Conitzer, Rupert Freeman, Markus Brill, and Yuqian Li. *Rules for Choosing Societal Tradeoffs.* In Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence (AAAI-16), Phoenix, Arizona, 2016.

Markus Brill, Rupert Freeman, and Vincent Conitzer. *Computing Possible and Necessary Equilibrium Actions (and Bipartisan Set Winners).* In Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence (AAAI-16), Phoenix, Arizona, 2016.

Rupert Freeman, Markus Brill, and Vincent Conitzer. *General Tiebreaking Schemes for Computational Social Choice.* In Proceedings of the Fourteenth International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS-15), Istanbul, Turkey, 2015.

Vincent Conitzer, Markus Brill, and Rupert Freeman. *Crowdsourcing Societal Tradeoffs.* In Proceedings of the Fourteenth International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS-15) Blue Sky Ideas Track, Istanbul, Turkey, 2015.

Haris Aziz, Markus Brill, Vincent Conitzer, Edith Elkind, Rupert Freeman, and Toby Walsh. *Justified Representation in Approval-Based Committee Voting.* In Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI-15), Austin, Texas, 2015.

Rupert Freeman, Markus Brill, and Vincent Conitzer. *On the Axiomatic Characterization of Runoff Voting Rules.* In Proceedings of the Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI-14), Quebec City, Canada, 2014.

WORKING PAPERS

Jens Witkowski, Rupert Freeman, Jennifer Wortman Vaughan, David M. Pennock, and Andreas Krause. *Incentive-Compatible Forecasting Competitions.* (Supersedes the AAAI-18 paper above)

Rupert Freeman, Nisarg Shah, and Rohit Vaish. *Best of Both Worlds: Ex-ante and Ex-Post Fairness in Resource Allocation.* (Supersedes the EC-20 paper above)

Markus Brill, Rupert Freeman, Svante Janson, and Martin Lackner. *Phragmén's Voting Methods and Justified Representation.* (Supersedes the AAAI-17 paper above)

Rupert Freeman, Evi Micha, and Nisarg Shah. *Two-Sided Matching Meets Fair Division.*

INVITED TALKS

No-Regret and Incentive-Compatible Online Learning
2020 INFORMS Annual Meeting — November 2020

Best of Both Worlds: Ex-ante and Ex-Post Fairness in Resource Allocation
2020 INFORMS Annual Meeting — November 2020

Truthful Aggregation of Budget Proposals
Duke University, CS-Econ Seminar — May 2019

Stanford University, Research on Algorithms and Incentives in Networks Seminar — October 2019
UC Santa Cruz, AI for Social Good Guest Lecture — October 2019
Online Social Choice and Welfare Seminar Series — January 2021

Wagering Mechanisms: From Fair Division to No-Regret Learning
Rensselaer Polytechnic Institute, CS Colloquium — October 2018
Yale University, CS/Econ Seminar — December 2019

An Equivalence Between Wagering and Fair-Division Mechanisms
Harvard University, EconCS Seminar — September 2018
2019 INFORMS Annual Meeting — October 2019

Algorithmic Shared Ownership
Illinois Institute of Technology, CS Colloquium — February 2018
UC Santa Barbara, CS Colloquium — January 2018
Microsoft Research NYC — January 2018

TEACHING

Classes Taught

Decision Analysis — Fall 2020

Tutorial Presentations

Recent Advances in Fair Resource Allocation
ACM Conference on Economics and Computation (EC) — June 2019
AAAI Conference on Artificial Intelligence — February 2020
International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) — May 2020

Teaching Assistantships

Duke University: Crowdsourcing Societal Tradeoffs — Spring 2015
Duke University: Discrete Mathematics for Computer Science — Spring, Fall 2014

SERVICE

Senior Program Committee: IJCAI (2021)

Program Committee: AAAI (2018, 2019, 2020), IJCAI (2018 [two-star distinguished reviewer, among top 2%], 2019, 2020, 2021), EC (2019, 2021), AISTATS (2018)

Journal Reviewing: Social Choice and Welfare (2014), Journal of Artificial Intelligence Research (2016, 2018, 2019), Artificial Intelligence Journal (2017, 2020), Discrete Optimization (2018), Journal of Autonomous Agents and Multi-Agent Systems (2019, 2020), Optimization Letters (2021)

Other Conference Reviewing: AAAI (2021), SODA (2018, 2020), WINE (2017, 2019, 2020), AIES (2019), SAGT (2017), MFCS (2017), EC (2017)