

Lirong Xia

Curriculum Vitae

Professor of Computer Science, Rutgers University - New Brunswick
Deputy Director of DIMACS

CONTACT INFORMATION

Computer Science Department	<i>Office:</i> CoRE 424
Rutgers University	<i>Phone:</i> +1-848-445-0073
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Piscataway, NJ 08854, USA	<i>Homepage:</i> https://www.cs.rutgers.edu/~lirong.xia

RESEARCH INTERESTS

Artificial intelligence, decision-making under uncertainty, algorithm design, social choice theory, game theory, mechanism design, prediction markets, preference learning, differential privacy, blockchain.

EDUCATION

Duke University, Durham, North Carolina, USA

2007–2011 Ph.D., Computer Science

– Supervisor: Prof. Vincent Conitzer

– Duke CS Outstanding Ph.D. Dissertation Award

2007–2010 M.A., Economics

Tsinghua University, Beijing, China

2000–2004 B.E., Department of Computer Science and Technology

EMPLOYMENT AND RESEARCH EXPERIENCE

Rutgers, Piscataway, NJ, USA

2024 Sep - present Professor of CS, Deputy Director of DIMACS

RPI, Troy, NY, USA

2019 Jan - 2024 Aug Associate professor, CS

RPI, Troy, NY, USA

2013 July - 2018 Dec Assistant professor, CS

Shanghai University of Finance and Economics, Shanghai, China

2017 June Visiting scholar, ITCS
– Host: Prof. Pinyan Lu

University of California, Berkeley, Berkeley, CA, USA

2015 Aug-Dec Visiting scholar, Simons Institute
– Supported by the 2015 Simons-Berkeley Fellowship for the Economics and Computation Program

Harvard University, Cambridge, MA, USA

2011–2013 Postdoc, Center for Research on Computation and Society (CRCS)
– Supported by the 2011 NSF Computing Innovation Fellows Program
– Host: Prof. David C. Parkes

Yahoo! Labs, New York City, New York, USA

2010 Summer research intern
– Mentor: David M. Pennock

Tsinghua University, Beijing, China

2004–2007 Research assistant
– Mentor: Prof. Mingsheng Ying

SELECTED DISTINCTIONS

2018 RPI's James M. Tien' 66 Early Career Award.
2017 Invited talk at IJCAI Early Career Spotlight Track.
2015 IEEE Intelligent Systems AI's 10 to watch.
2015 Simons-Berkeley Research Fellowship
2015 NSF CAREER Award
2013 The Singapore National Research Foundation (NRF) Fellowship Award (\approx 2.4M USD research grant, declined to join RPI).
2012 AAMAS-12 best PC finalist
2011 One of the 20 NSF Computing Innovation Fellows (CIFellows)
2011 Duke CS Outstanding Ph.D. Dissertation Award
2010 Duke CS Outstanding Departmental Service Award
2010 Facebook Ph.D. Fellowship finalist
2009 Duke CS Outstanding Ph.D. Research Initiation Project Award
2007–2011 James B. Duke Fellowship

PROFESSIONAL SERVICE

2021–	Associate editor of <i>Artificial Intelligence</i> (AIJ)
2020–	Associate editor of <i>IEEE Transactions on Artificial Intelligence</i> (TAI)
2015–	Associate editor of <i>Mathematical Social Sciences</i> (MSS)
2017–2020	Editorial board member of <i>Artificial Intelligence</i> (AIJ)
2013–2017	Editorial board member of <i>Journal of Artificial Intelligence Research</i> (JAIR)
2022	General co-chair, <i>The 18th Conference on Web and Internet Economics</i> (WINE-2022)
2018	Co-chair, <i>The Seventh International Workshop on Computational Social Choice</i> (COMSOC-2018)
2015	Co-chair, <i>The Third Conference on Auctions, Market Mechanisms and Their Applications</i> (AMMA)
2014–2015	Co-chair, <i>Multidisciplinary Workshop on Advances in Preference Handling</i> (MPREF)
2012	Co-chair, <i>Workshop on Cooperative Games in Multiagent Systems</i> (Coop-MAS)
Area chair	AAAI (20,23), AAMAS (23), ACM EC (22), HCOMP (19), NeurIPS (21-22)
SPC	AAAI (18), AAMAS (17–20), IJCAI (13, 15–20), WINE (23)
PC	AAAI (12–16), AAMAS (12–16), ACM EC (12–21), AISTATS (13–16), IJCAI (11)

RESEARCH GROUP

Postdoc: Yichi Zhang

Ph.D. students: Qishen Han (Y4)

Alumni: **Postdoc:** Rohit Vaish (2020).

Ph.D.: Joshua Kavner (2024), Farhad Mohsin (2023), Ao Liu (2023), Jun Wang (2022), Zhibing Zhao (2020), Sujoy Sikdar (2018).

MS: Sikai Ruan (2024), Alex Montes (2024), Mason duBoef (2024), Inwon Kang (2022), Sahith Bhamidipati (2022), Chris Vanderloo (2021), Gary Wang (2021), Bobby Martino (2018), Tyler Shephard (2018), Jason Ko (2017), Binghui Deng (2017), Peter Piech (2016), Kevin Hwang (2016).

BS 2022: Ben Kelly, Jingwen Qian, Haoyu Chen, Yuxuan Chen.

BS 2021: Shikan Chen, Shuo Han, Yutao Sun, Yanting Wang, Weijian Zeng.

BS 2020: Wufei Ma, Lei Luo, Yiwei Chen, Gavriel Zahavi.

BS 2019: Paween Pitimanaaree, Kaijian Zhong, Chang Xu, Shuze Liu, Junming Wang, William Hsu, Yanlin Zhu.

BS 2018: Mengyi Li, Haoming Li, Xiaochuang Yuan, Tristan Villamil.

BS 2017: Chaonan Ye.
BS 2016: Samuel Yuan.

TEACHING

Introduction to Artificial Intelligence: 2023 Spring, 2022 Spring, 2021 Spring, 2020 Spring, 2019 Spring, 2018 Spring, 2017 Spring, 2014 Spring

Introduction to Algorithms: 2017 Fall, 2016 spring

Economics and Computation: 2023 Spring, 2022 Spring, 2021 Spring, 2020 Spring, 2019 Spring

Computational Social Choice: 2016 Spring, 2014 Fall, 2013 Fall

Computational Social Processes: 2016 Fall

Computer Science Graduate Skills Seminar: 2022 Fall, 2021 Fall, 2021 Spring, 2019 Fall

PUBLICATIONS

Book

1. Lirong Xia. Learning and Decision-Making from Rank Data, Morgan & Claypool, 2019. Synthesis Lectures on Artificial Intelligence and Machine Learning.

Book Chapters

2. Jerome Lang and Lirong Xia. Voting in Combinatorial Domains. In Felix Brandt, Vincent Conitzer, Ulle Endriss, Jerome Lang, and Ariel Procaccia, editors, Handbook of Computational Social Choice, chapter 9. Cambridge University Press, 2016.

Journal papers

3. Ao Liu, Yu-Xiang Wang, Lirong Xia. Smoothed Differential Privacy. *TLMR*, 2023.
4. Jingwen Qian, Sujoy Sikdar, Ge Wang, Lirong Xia. Anti-Collusion Dynamic Distanced Online Testing. *Technology & Innovation*. 2023.
5. Qian Li, Liang Wang, Lirong Xia, Wenxun Zheng, Yuxuan Zhou. A practical multi-objective auction design and optimization framework for sponsored search. *Operations Research Letters*, 2023.
6. Dorothea Baumeister, Marc Neveling, Magnus Roos, Jörg Rothe, Lena Schend, Robin Weishaupt, Lirong Xia. The Possible Winner with Uncertain Weights Problem. *Journal of Computer and System Sciences*, 2023.
7. Xiaoxi Guo, Sujoy Sikdar, Lirong Xia, Hanpin Wang, Yongzhi Cao. Favoring Eagerness for Remaining Items: Achieving Efficient and Fair Assignments. *Journal of Artificial Intelligence Research (JAIR)*, 2023.

8. Haibin Wang, Sujoy Sikdar, Xiaoxi Guo, Lirong Xia, Yongzhi Cao, Hanpin Wang. Multi-type Resource Allocation with Partial Preferences. *Artificial Intelligence (AIJ)*, 2023.
9. Farhad Mohsin, Ao Liu, Pin-Yu Chen, Francesca Rossi, Lirong Xia. Learning to Design Fair and Private Voting Rules. *Journal of Artificial Intelligence Research (JAIR)*, 2022.
10. Ao Liu, Xiaoyu Chen, Sijia Liu, Lirong Xia, Chuang Gan. Certifiably Robust Interpretation via Renyi Differential Privacy. *Artificial Intelligence (AIJ)*, 2022.
11. Lirong Xia. Group decision making under uncertain preferences: powered by AI, empowered by AI. *Annals of the New York Academy of Sciences*, 2022.
12. Zhibing Zhao, Yingce Xia, Tao Qin, Lirong Xia, and Tie-Yan Liu. Dual Learning: Theoretical Study and an Algorithmic Extension. In *SN Computer Science*, 2021.
13. Xiaoxi Guo, Sujoy Sikdar, Haibin Wang, Lirong Xia, Yongzhi Cao, Hanpin Wang. Probabilistic serial mechanism for multi-type resource allocation. In *Autonomous Agents and Multi-Agent Systems*, 2021.
14. Mengzhou Li, Lei Luo, Sujoy Sikdar, Navid Ibtehaj Nizam, Shan Gao, Hongming Shan, Melanie Kruger, Uwe Kruger, Hisham Mohamed, Lirong Xia, Ge Wang. Optimized collusion prevention for online exams during social distancing. *npj Science of Learning*, 2021.
15. Jerome Lang, Jerome Mengin, and Lirong Xia. Voting on Multi-Issue Domains with Conditionally Lexicographic Preferences. *Artificial Intelligence (AIJ)*, 2018.
16. David C. Parkes, Paul Tylkin, and Lirong Xia. Thwarting Vote Buying Through Decoy Ballots: Extended Version. In *AAMAS 2017 Visionary Papers, LNAI 10643*. 2017.
17. Tie Luo, Sajal K. Das, Hwee Pink Tan, and Lirong Xia. Incentive Mechanism Design for Crowdsourcing: An All-Pay Auction Approach. *ACM Transactions on Intelligent Systems and Technology (TIST)*. Volume 7 Issue 3, Article No. 35, April 2016.
18. Jessica Davies, George Katsirelos, Nina Narodytska, Toby Walsh and Lirong Xia. Complexity of and Algorithms for the Manipulation of Borda, Nanson and Baldwin's Voting Rules. *Artificial Intelligence (AIJ)*, 217:20-42, 2014.
19. Yongzhi Cao, Lirong Xia, and Mingsheng Ying. Probabilistic automata for computing with words. *Journal of Computer and System Sciences (JCSS)*, 79(1): 152-172, 2013.
20. Yann Chevaleyre, Jérôme Lang, Nicolas Maudet, Jérôme Monnot, and Lirong Xia. New Candidates Welcome! Possible Winners with respect to the Addition of New Candidates. *Mathematical Social Sciences*, 64(1): 74–88, 2012.
21. Lirong Xia and Vincent Conitzer. Determining Possible and Necessary Winners under Common Voting Rules Given Partial Orders. *Journal of Artificial Intelligence*

Research (JAIR), 41:25–67, 2011.

22. Jérôme Lang and Lirong Xia. Sequential composition of voting rules in multi-issue domains. *Mathematical Social Sciences* 57(3): 304-324, 2009.
23. Jing Xiao, Lan Liu, Lirong Xia, and Tao Jiang. Efficient Algorithms for Reconstructing Zero-Recombinant Haplotypes on a Pedigree Based on Fast Elimination of Redundant Linear Equations. *SIAM Journal on Computing (SICOMP)*, 38(6): 2198-2219, 2009.
24. Lirong Xia and Sanjiang Li. On minimal models of the Region Connection Calculus. In *Fundamenta Informaticae* 69(4): 427–446, 2005.

Archival conference papers

25. Hadi Hosseini, Joshua Kavner, Tomasz Was, Lirong Xia. Distribution of Chores with Information Asymmetry. In Proceedings of **ECAI-24**.
26. Qishen Han, Amélie Marian, Lirong Xia. Determining Winners in Elections with Absent Votes. In Proceedings of **IJCAI-24**.
27. Farhad Mohsin, Qishen Han, Sikai Ruan, Pin-Yu Chen, Francesca Rossi and Lirong Xia. Computational Complexity of Verifying the Group No-show Paradox. In Proceedings of **IJCAI-24**.
28. Lirong Xia. Most Equitable Voting Rules. In Proceedings of **WINE-23**.
29. Qishen Han, Biaoshuai Tao, Lirong Xia. Average Envy-freeness for Indivisible Items. In Proceedings of **EAAMO-23**.
30. Ao Liu, Qishen Han, Lirong Xia, Nengkun Yu. Accelerating Voting by Quantum Computation. In Proceedings of **UAI-23**.
31. Lirong Xia. The Impact of a Coalition: Assessing the Likelihood of Voter Influence in Large Elections. In Proceedings of **EC-23**.
32. Qishen Han, Grant Schoenebeck, Biaoshuai Tao, Lirong Xia. The Wisdom of Strategic Voting. In Proceedings of **EC-23**.
33. Xiaoxi Guo, Sujoy Sikdar, Lirong Xia, Yongzhi Cao, Hanpin Wang. First-Choice Maximality Meets Ex-ante and Ex-post Fairness. In Proceedings of **IJCAI-23**.
34. Joshua Kavner, Reshef Meir, Francesca Rossi and Lirong Xia. Convergence of Iterative Combinatorial Voting under Uncertainty. In Proceedings of **IJCAI-23**.
35. Hadi Hosseini, Sujoy Sikdar, Rohit Vaish, Lirong Xia. Fairly Dividing Mixtures of Goods and Chores under Lexicographic Preferences. In Proceedings of **AAMAS-23**.
36. Lirong Xia. Semi-Random Impossibilities of Condorcet Criterion. In Proceedings of **AAAI-23**.

37. Zhechen Li, Ao Liu, Lirong Xia, Yongzhi Cao, Hanpin Wang. Differentially Private Condorcet Voting. In Proceedings of **AAAI-23**.
38. Reshef Meir, Ofra Amir, Gal Cohensius, Omer Ben-Porat, and Lirong Xia. Frustratingly Easy Truth Discovery. In Proceedings of **AAAI-23**.
39. Lirong Xia, Weiqiang Zheng. Beyond the Worst Case: Semi-Random Complexity Analysis of Winner Determination. In Proceedings of **WINE-22**.
40. Benjamin Kelly, Inwon Kang, Lirong Xia. Crowdsourcing Perceptions of Gerrymandering. In Proceedings of **HCOMP-22**.
41. Zhibing Zhao, Ao Liu, Lirong Xia. Learning Mixtures of Random Utility Models with Features from Top- l Orders. In Proceedings of **IJCAI-22**.
42. Sujoy Sikdar, Sikai Ruan, Qishen Han, Paween Pitimanaaree, Jeremy Blackthorne, Bulent Yener, Lirong Xia. Anti-Malware Sandbox Games. In Proceedings of **AAMAS-22**.
43. Ao Liu, Lirong Xia. The Semi-Random Likelihood of Doctrinal Paradoxes. In Proceedings of **AAAI-22**.
44. Lirong Xia. The Semi-Random Satisfaction of Voting Axioms. In Proceedings of **NeurIPS-21 (spotlight presentation)**.
45. Joshua Kavner, Lirong Xia. Strategic Behavior is Bliss: Iterative Voting Improves Social Welfare. In Proceedings of **NeurIPS-21**.
46. Lirong Xia. How Likely Are Large Elections Tied? In Proceedings of **ACM EC-21**.
47. Sujoy Sikdar, Xiaoxi Guo, Haibin Wang, Lirong Xia, and Yongzhi Cao. Sequential Mechanisms for Multi-type Resource Allocation. In Proceedings of **AAMAS-21**.
48. Lirong Xia, Weiqiang Zheng. The Smoothed Complexity of Computing Kemeny and Slater Rankings. In Proceedings of **AAAI-21**.
49. Elliot Anshelevich, Zack Fitzsimmons, Rohit Vaish, Lirong Xia. Representative Proxy Voting. In Proceedings of **AAAI-21**.
50. Hadi Hosseini, Sujoy Sikdar, Rohit Vaish, Lirong Xia. Fair and Efficient Allocations under Lexicographic Preferences. In Proceedings of **AAAI-21**.
51. Yiwei Chen, Jingwen Qian, Junming Wang, Lirong Xia, and Gavriel Zahavi. OPRA: An Open-Source Online Preference Reporting and Aggregation System. In Proceedings of **AAAI-21**, Demonstrations Program.
52. Lirong Xia. The Smoothed Possibility of Social Choice. In Proceedings of **NeurIPS-2020**.
53. Lirong Xia. Optimal Statistical Hypothesis Testing for Social Choice. In Proceedings of **UAI-2020**.

54. Ao Liu, Yun Lu, Lirong Xia and Vassilis Zikas. How Private Is Your Voting? In Proceedings of **UAI-2020**.
55. Rupert Freeman, Sujoy Sikdar, Rohit Vaish, Lirong Xia. Equitable Allocations of Indivisible Chores. In Proceedings of **AAMAS-20**.
56. Haibin Wang, Sujoy Sikdar, Xiaoxi Guo, Lirong Xia, Yongzhi Cao, Hanpin Wang. Multi-type Resource Allocation with Partial Preferences. In Proceedings of **AAAI-20**.
57. Hadi Hosseini, Sujoy Sikdar, Rohit Vaish, Jun Wang, Lirong Xia. Fair Division through Information Withholding. In Proceedings of **AAAI-20**.
58. Zhibing Zhao, Yingce Xia, Tao Qin, Lirong Xia, and Tie-Yan Liu. Dual Learning: Theoretical Study and an Algorithmic Extension. In Proceedings of **ACML-20**.
59. Zhihuai Chen, Qian Li, Xiaoming Sun, Lirong Xia, and Jialin Zhang. Approximate Single-Peakedness in Large Elections. In Proceedings of **ICKG-20**.
60. Zhibing Zhao and Lirong Xia. Learning Mixtures of Plackett-Luce Models from Structured Partial Orders. In Proceedings of **NeurIPS-19**.
61. Haoming Li, Sujoy Sikdar, Rohit Vaish, Junming Wang, Lirong Xia, Chaonan Ye. Minimizing Time-to-Rank: A Learning and Recommendation Approach. In Proceedings of **IJCAI-2019**.
62. Rupert Freeman, Sujoy Sikdar, Rohit Vaish, Lirong Xia. Equitable Allocations of Indivisible Goods. In Proceedings of **IJCAI-2019**.
63. Ao Liu, Zhibing Zhao, Chao Liao, Pinyan Lu, and Lirong Xia. Learning Plackett-Luce Mixtures from Partial Preferences. In Proceedings of **AAAI-19**.
64. Ao Liu, Qiong Wu, Zhenming Liu, and Lirong Xia. Near-Neighbor Methods in Random Preference Completion. In Proceedings of **AAAI-19**.
65. Sujoy Sikdar, Sibel Adali, and Lirong Xia. Top-Trading-Cycles Mechanisms with Acceptable Bundles. In Proceedings of **AAAI-19**.
66. Jun Wang, Sujoy Sikdar, Tyler Shepherd, Zhibing Zhao, Chunheng Jiang and Lirong Xia. Practical Algorithms for STV and Ranked Pairs with Parallel Universes Tiebreaking. In Proceedings of **AAAI-19**.
67. Ao Liu, Lirong Xia, Andrew Duchowski, Reynold Bailey, Kenneth Holmqvist, and Eakta Jain. Differential Privacy for Eye-Tracking Data. In ACM Symposium on Eye Tracking Research & Applications (**ETRA-2019**), 2019.
68. Yanlin Zhu, Lirong Xia, and Oshani Seneviratne. A Proposal For Account Recovery in Decentralized Applications. In Proceedings of IEEE International Conference on Blockchain (**Blockchain-2019**), 2019.

69. Shuze Liu, Farhad Mohsin, Lirong Xia and Oshani Seneviratne. Strengthening Smart Contracts to Handle Unexpected Situations. In IEEE International Conference on Decentralized Applications and Infrastructures (**DAPPCON**), 2019.
70. Mengyi Li, Lirong Xia, and Oshani Seneviratne. Leveraging Standards Based Ontological Concepts in Distributed Ledgers: A Healthcare Smart Contract Example. In IEEE International Conference on Decentralized Applications and Infrastructures (**DAPPCON**), 2019.
71. Malik Magdon-Ismael and Lirong Xia. A Mathematical Model For Optimal Decisions In A Representative Democracy. In Proceedings of **NeurIPS-18**.
72. Zhibing Zhao, Haoming Li, Junming Wang, Jeffrey Kephart, Nicholas Mattei, Hui Su, and Lirong Xia. A Cost-Effective Framework for Preference Elicitation and Aggregation. In Proceedings of **UAI-18**.
73. Zhibing Zhao and Lirong Xia. Composite Marginal Likelihood Methods for Random Utility Models. In Proceedings of **ICML-18**.
74. Zhibing Zhao, Tristan Villamil, and Lirong Xia. Learning Mixtures of Random Utility Models. In Proceedings of **AAAI-18**.
75. Lirong Xia. Improving Group Decision-Making by Artificial Intelligence. In Proceedings of **IJCAI-17**.
76. David Parkes, Paul Tylkin, and Lirong Xia. Thwarting Vote Buying through Decoy Ballots. In Proceedings of **IJCAI-17**.
77. Shreyas Sekar, Sujoy Sikdar, and Lirong Xia. Condorcet Consistent Bundling with Social Choice. In Proceedings of **AAMAS-17**.
78. Sujoy Sikdar, Sibel Adali, and Lirong Xia. Mechanism Design for Multi-Type Housing Markets. In Proceedings of **AAAI-17**.
79. Stephen Gross, Elliot Anshelevich and Lirong Xia. Vote Until Two of You Agree: Mechanisms with Small Distortion and Sample Complexity. In Proceedings of **AAAI-17**.
80. Haris Aziz, Thomas Kalinowski, Toby Walsh, and Lirong Xia. Welfare of Sequential Allocation Mechanisms for Indivisible Goods. In Proceedings of **ECAI-16**.
81. Lirong Xia. Bayesian Estimators as Voting Rules. In Proceedings of **UAI-16**, **full oral presentation**.
82. Zhibing Zhao, Peter Piech, and Lirong Xia. Learning Mixtures of Plackett-Luce Models. In Proceedings of **ICML-16**.
83. Erika Mackin and Lirong Xia. Allocating Indivisible Items in Categorized Domains. In Proceedings of **IJCAI-16**.

84. Lirong Xia. Quantitative Extensions of The Condorcet Jury Theorem With Strategic Agents. In Proceedings of **AAAI-16**.
85. David Hughes, Kevin Hwang, and Lirong Xia. Computing Optimal Bayesian Decisions for Rank Aggregation via MCMC Sampling. In Proceedings of **UAI-15**.
86. Lirong Xia. Generalized Decision Scoring Rules: Statistical, Computational, and Axiomatic Properties. In Proceedings of **ACM EC-15**.
87. Haris Aziz, Toby Walsh, and Lirong Xia. Possible and Necessary Allocations via Sequential Mechanisms. In Proceedings of **IJCAI-15**.
88. Ethan Gertle, Erika Mackin, Malik Magdon-Ismael, Lirong Xia, and Yuan Yi. Computing Manipulations of Ranking Systems. In Proceedings of **AAMAS-15**.
89. Haris Aziz, Simon Mackenzie, Lirong Xia, and Chun Ye. Structure and complexity of ex post efficient random assignments. In Proceedings of **AAMAS-15** (short paper).
90. Hossein Azari Soufiani, David C. Parkes, and Lirong Xia. A Statistical Decision-Theoretic Framework for Social Choice. In *Proceedings of the Annual Conference on Neural Information Processing Systems (NIPS-14)*, **full oral presentation**.
91. Lili Dworkin, Michael Kearns, and Lirong Xia. Efficient Inference for Complex Queries on Complex Distributions. In Proceedings of **AISTAT-14**.
92. Tie Luo, Hwee-Pink Tan, and Lirong Xia. Profit-Maximizing Incentive for Participatory Sensing. In Proceedings of **INFOCOM-14**.
93. Lirong Xia. Fixed-Parameter Tractability of Integer Generalized Scoring Rules. In Proceedings of **AAMAS-14**.
94. Hossein Azari Soufiani, David C. Parkes, and Lirong Xia. Computing Parametric Ranking Models via Rank-Breaking. In Proceedings of **ICML-14**.
95. Thomas Kalinowski, Nina Narodytska, Toby Walsh, and Lirong Xia. Strategic Behavior when Allocating Indivisible Goods Sequentially. In Proceedings of **AAAI-13**.
96. Hossein Azari Soufiani, William Chen, David C. Parkes, and Lirong Xia. Generalized Method-of-Moments for Rank Aggregation. In Proceedings of **NIPS-13**.
97. Hossein Azari Soufiani, David C. Parkes, and Lirong Xia. Preference Elicitation For General Random Utility Models. In Proceedings of **UAI-13**.
98. Lirong Xia. Designing Social Choice Mechanisms Using Machine Learning. In Proceedings of **AAMAS-13**, Challenges and Visions Track.
99. Hossein Azari Soufiani, David C. Parkes, and Lirong Xia. Random Utility Theory for Social Choice. In Proceedings of **NIPS-12**.
100. Jérôme Lang, Jérôme Mengin, and Lirong Xia. Aggregating Conditionally Lexicographic Preferences on Multi-Issue Domains. In *Proceedings of the 18th International*

Conference on Principles and Practice of Constraint Programming (CP-12), pp. 973–987, Quebec City, Canada.

101. Nina Narodytska, Toby Walsh, and Lirong Xia. Combining Voting Rules Together. In Proceedings of **ECAI-12**.
102. Dorothea Baumeister, Magnus Roos, Joerg Rothe, Lena Schend, and Lirong Xia. The Possible Winner Problem with Uncertain Weight. In Proceedings of **ECAI-12**.
103. David C. Parkes and Lirong Xia. A Complexity-of-Strategic-Behavior Comparison between Schulze’s Rule and Ranked Pairs. In Proceedings of **AAAI-12**.
104. Bo Waggoner, Lirong Xia, and Vincent Conitzer. Evaluating Resistance to False-Name Manipulations in Elections. In Proceedings of **AAAI-12**.
105. Lirong Xia. Computing the Margin of Victory for Various Voting Rules. In Proceedings of **EC-12**.
106. Vincent Conitzer, and Lirong Xia. Approximating Common Voting Rules by Sequential Voting in Multi-Issue Domains. In *Proceedings of the 13th International Conference on Principles of Knowledge Representation and Reasoning (KR-12)*.
107. Toby Walsh and Lirong Xia. Lot-based Voting Rules. In Proceedings of **AAMAS-12**.
108. David M. Pennock and Lirong Xia. Price-updating in Combinatorial Prediction Markets with Bayesian Networks. In Proceedings of **UAI-11**.
109. Vincent Conitzer, Toby Walsh, and Lirong Xia. Dominating Manipulations in Voting with Partial Information. In Proceedings of **AAAI-11**.
110. Nina Narodytska, Toby Walsh, and Lirong Xia. Manipulation of Nanson’s and Baldwin’s rule. In Proceedings of **AAAI-11**.
111. Vincent Conitzer, Jérôme Lang, and Lirong Xia. Hypercubewise Preference Aggregation in Multi-issue Domains. In Proceedings of **IJCAI-11**.
112. Lirong Xia and David M. Pennock. An Efficient Monte-Carlo Algorithm for Pricing Combinatorial Prediction Markets for Tournaments. In Proceedings of **IJCAI-11**.
113. Lirong Xia and Vincent Conitzer. A Maximum Likelihood Approach towards Aggregating Partial Orders. In Proceedings of **IJCAI-11**.
114. Lirong Xia, Vincent Conitzer, and Jérôme Lang. Strategic Sequential Voting in Multi-issue Domains and Multiple-Election Paradoxes. In Proceedings of **EC-11**.
115. Lirong Xia, Jérôme Lang and Jérôme Monnot. Possible Winners When New Alternatives Join: New Results Coming Up! In Proceedings of **AAMAS-11**.
116. Lirong Xia and Vincent Conitzer. Strategy-proof Voting Rules over Multi-issue Domains with Restricted Preferences. In Proceedings of **WINE-10**.

117. Lirong Xia. Computational Social Choice: Strategic and Combinatorial Aspects. In Proceedings of **AAAI-10**.
118. Lirong Xia and Vincent Conitzer. Stackelberg Voting Games: Computational Aspects and Paradoxes. In Proceedings of **AAAI-10**.
119. Lirong Xia and Vincent Conitzer. Compilation Complexity of Common Voting Rules. In Proceedings of **AAAI-10**.
120. Lirong Xia, Vincent Conitzer, and Ariel Procaccia. A Scheduling Approach to Coalitional Manipulation. In Proceedings of **EC-10**.
121. Lirong Xia, Vincent Conitzer, and Jérôme Lang. Aggregating Preferences in Multi-Issue Domains by Using Maximum Likelihood Estimators. In Proceedings of **AAMAS-10**.
122. Sayan Bhattacharya, Vincent Conitzer, Kamesh Munagala, and Lirong Xia. Incentive Compatible Budget Reporting in Multi-unit Auctions. In Proceedings of **SODA-10**.
123. Lirong Xia and Vincent Conitzer. Finite Local Consistency Characterizes Generalized Scoring Rules. In Proceedings of **IJCAI-09**.
124. Lirong Xia, Michael Zuckerman, Ariel D. Procaccia, Vincent Conitzer, and Jeffrey S. Rosenschein. Complexity of unweighted coalitional manipulation under some common voting rules. In Proceedings of **IJCAI-09**.
125. Lirong Xia and Jérôme Lang. A Dichotomy Theorem on the Existence of Efficient or Neutral Sequential Voting Correspondences. In Proceedings of **IJCAI-09**.
126. Vincent Conitzer, Jérôme Lang, and Lirong Xia. How hard is it to control sequential elections via the agenda? In Proceedings of **IJCAI-09**.
127. Vincent Conitzer, Matthew Rognlie, and Lirong Xia. Preference Functions That Score Rankings and Maximum Likelihood Estimation. In Proceedings of **IJCAI-09**.
128. Lirong Xia and Vincent Conitzer. Generalized Scoring Rules and the Frequency of Coalitional Manipulability. In Proceedings of **EC-08**.
129. Lirong Xia and Vincent Conitzer. A Sufficient Condition for Voting Rules to Be Frequently Manipulable. In Proceedings of **EC-08**.
130. Lirong Xia, Vincent Conitzer, and Jérôme Lang. Voting on Multiattribute Domains with Cyclic Preferential Dependencies. In Proceedings of **AAAI-08**.
131. Lirong Xia and Vincent Conitzer. Determining Possible and Necessary Winners under Common Voting Rules Given Partial Orders. In Proceedings of **AAAI-08**.
132. Lirong Xia, Jérôme Lang, and Mingsheng Ying. Strongly decomposable voting rules on multiattribute domains. In Proceedings of **AAAI-07**.

133. Lirong Xia, Jérôme Lang, and Mingsheng Ying. Sequential voting rules and multiple elections paradoxes. In *Proceedings of the 11th conference on Theoretical Aspects of Rationality and Knowledge (TARK-07)*.
134. Jing Xiao, Lan Liu, Lirong Xia, and Tao Jiang. Fast Elimination of Redundant Linear Equations and Reconstruction of Recombination-Free Mendelian Inheritance on a Pedigree. In Proceedings of **SODA-07**.
135. Lei Wang, Xu Liu, Lirong Xia, Guangyou Xu, and Alfred M. Bruckstein. Image orientation detection with integrated human perception cues (or which way is up). In *IEEE International Conference on Image Processing (ICIP-03)*, vol 2: 539–542, Barcelona, Spain, 2003.

Miscellaneous

136. Lirong Xia. Generalized Scoring Rules: A Framework That Reconciles Borda and Condorcet. *SIGecom Exchanges*, 2014.