Sujoy Kumar Sikdar

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Research Interests

Artificial Intelligence, Computational Social Choice, Mechanism Design, Algorithm Design, Machine Learning, Computational Social Science.

Education

Doctor of Philosophy, Computer Science, 2012 - 2018
Rensselaer Polytechnic Institute, Troy, NY.
Dissertation: Optimal Multi-Attribute Decision Making in Social Choice Problems.
Institute Nominee for the Joint AAAI/ACM SIGAI Doctoral Dissertation Award.
Supervisors: Prof. Lirong Xia, Prof. Sibel Adalı.

Master of Science, Computer Science, 2012 - 2015
Rensselaer Polytechnic Institute, Troy, NY.
Thesis: Towards an Understanding of Information Credibility on Online Social Networks.
Supervisor: Prof. Sibel Adalı.

Bachelor of Engineering, Information Technology, 2005 - 2009
Manipal Institute of Technology, Manipal, KA, India.

Research Experience and Employment

Postdoctoral Research Associate, 2019 - Present
Washington University in St. Louis, St. Louis, MO.
Adviser: Prof. Sanmay Das.

Research Assistant, 2012 - 2018
Rensselaer Polytechnic Institute, Troy, NY.
Research adviser: Prof. Sibel Adalı (2012-2016), Prof. Lirong Xia (2016-2018).

Software Developer II, 2009 - 2011
Juniper Networks, Bangalore, KA, India.

Software Intern, 2008 - 2009
Juniper Networks, Bangalore, KA, India.

Awards

Best Paper Award, 2013 International Conference on Social Computing (**SocialCom**).

Publications

1. Rupert Freeman, Sujoy Sikdar, Rohit Vaish, and Lirong Xia. *Equitable Allocations of Indivisible Chores.* (To Appear) In the 19th International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-20**).
2. Tao Xiao, and Sujoy Sikdar. *Size-Relaxed Committee Selection under the Chamberlin-Courant Rule.* (To Appear) In the 19th International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-20**).
3. Hadi Hosseini, Sujoy Sikdar, Rohit Vaish, Jun Wang, and Lirong Xia. *Fair Division Through Information Withholding.* (To Appear) In the Thirty-Fourth AAAI Conference on Artificial Intelligence (**AAAI-20**).

4. Haibin Wang, Sujoy Sikdar, Xiaoxi Guo, Lirong Xia, Yongzhi Cao, and Hanpin Wang. *Multi-type Resource Allocation with Partial Preferences.* (To Appear) In the Thirty-Fourth AAAI Conference on Artificial Intelligence (**AAAI-20**).
5. Haoming Li, Sujoy Sikdar, Rohit Vaish, Junming Wang, Lirong Xia, and Chaonan Ye. *Minimizing Time-to-Rank: A Learning and Recommendation Approach.* In Proceedings of the 28th International Joint Conference on Artificial Intelligence (**IJCAI-19**).
6. Rupert Freeman, Sujoy Sikdar, Rohit Vaish, and Lirong Xia. *Equitable Allocations of Indivisible Goods.* In Proceedings of the 28th International Joint Conference on Artificial Intelligence (**IJCAI-19**).
7. Sujoy Sikdar, Sibel Adalı, and Lirong Xia. *Mechanism Design for Multi-type Housing Markets with Acceptable Bundles.* In Proceedings of the Thirty-Third AAAI Conference on Artificial Intelligence (**AAAI-19**).
8. Hejun Wang, Sujoy Sikdar, Tyler Shepherd, Zhibing Zhao, Chunheng Jiang, and Lirong Xia. *Practical Algorithms for Multi-Stage Voting Rules with Parallel Universes Tiebreaking.* In Proceedings of the Thirty-Third AAAI Conference on Artificial Intelligence (**AAAI-19**).
9. Sujoy Sikdar. *Optimal Multi-Attribute Decision Making in Social Choice Problems.* (Doctoral Consortium) In Proceedings of the 27th International Joint Conference on Artificial Intelligence (**IJCAI-18**).
10. Shreyas Sekar, Sujoy Sikdar, and Lirong Xia. *Condorcet Consistent Bundling with Social Choice.* In Proceedings of the 16th International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-17**).
11. Sujoy Sikdar, Sibel Adalı, Lirong Xia. *Optimal Decision Making with CP-nets and PCP-nets.* (Short Paper) In Proceedings of the 16th International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-17**).
12. Sujoy Sikdar, Sibel Adalı, Lirong Xia. *Mechanism Design for Multi-Type Housing Markets.* In Proceedings of the 31st AAAI Conference on Artificial Intelligence (**AAAI-17**).
13. Benjamin Horne, Sibel Adalı, Sujoy Sikdar. *Identifying the Social Signals that Drive Online Discussions: A Case Study of Reddit Communities.* The 26th International Conference on Computer Communications and Networks (**ICCCN 2017**). IEEE, 2017.
14. Sujoy Sikdar, Sibel Adalı, Md Tanvir Amin, Tarek Abdelzaher, Kevin Chan, Jin-Hee Cho, Byungkyu Kang, John O'Donovan. *Finding True and Credible Information on Twitter.* 17th International Conference of Information Fusion (**FUSION-14**), pp. 1-8, July 2014.
15. Sujoy Sikdar, Byungkyu Kang, John O'Donovan, Tobias Hollerer, Sibel Adalı. *Cutting Through the Noise: Defining Ground Truth in Information Credibility on Twitter.* ASE HUMAN Journal 3(1), pp. 151-167, 2013.
16. Sujoy Sikdar, Byungkyu Kang, John O'Donovan, Tobias Hollerer, Sibel Adalı. *Understanding Information Credibility on Twitter.* 2013 International Conference on Social Computing (**SocialCom-13**), pp. 19-24, 8-14 September 2013. Received the **Best Paper Award.**

Dissertation

Sujoy Sikdar. *Optimal Multi-Attribute Decision Making in Social Choice Problems.* Ph.D. Dissertation. Co-advised by Prof. Lirong Xia and Prof. Sibel Adalı. 2018.

Workshop Papers

- Sujoy Sikdar, Sibel Adalı, Lirong Xia. *Optimal Decision Making with CP-nets and PCP-nets.* In EXPLORE-2017: The 4th Workshop on Exploring Beyond the Worst Case in Computational Social Choice (peer reviewed).

Invited Talks

- Chunheng Jiang, Sujoy Sikdar, Hejun Wang, Lirong Xia, and Zhibing Zhao. *Practical Algorithms for Computing STV and Other Multi-Round Voting Rules.* Invited talk at Dagstuhl Seminar 17261, Voting: Beyond Simple Majorities and Single-Winner Elections. 2017.

Teaching

- Guest Lecture on Fair Division; for CSE 516A: Multi-Agent Systems, offered by Prof. Sanmay Das. Washington University in St. Louis. Fall 2019.
- Guest Lecture on Blockchains; for CSCI-4150: Introduction to Artificial Intelligence, offered by Prof. Lirong Xia. Rensselaer Polytechnic Institute. Spring 2018.
- Guest Lecture on Computational Complexity; for CSCI-2300: Introduction to Algorithms, offered by Prof. Lirong Xia. Rensselaer Polytechnic Institute. Fall 2017.
- Guest Lecture on Probability; for CSCI-4150: Introduction to Artificial Intelligence, offered by Prof. Lirong Xia. Rensselaer Polytechnic Institute. Spring 2017.

Professional Service

- Program Committee member: AAAI 2019-20, IJCAI 2016,18, WWW 2015.
- Reviewer for Journals: Journal of Artificial Intelligence Research, Journal of Autonomous Agents and Multi-Agent Systems, Transactions on Knowledge Discovery from Data, Transactions on Knowledge and Data Engineering, Transactions on the Web; Conferences: AAAI, AISTAT, EC, IJCAI, NIPS, WINE.

Data Science

Machine learning and Statistics packages: scikit-learn, scipy, Weka, Tensorflow.

Natural language processing: nltk, word2vec, LIWC, IBM Watson APIs.

Optimization packages: AMPL/Cplex, Gurobi.

Social network APIs, and analytics on large scale social network datasets and large crowdsourced experiments conducted on Amazon Mechanical Turk.

Skills

Languages:	Python, MATLAB, C, C++, HTML, Javascript.
Version control:	Perforce, SVN, Git.
Operating Systems:	Linux, Windows.
Typography:	Latex, Microsoft Office.