Debmalya Mandal

Title:	Assistant Professor
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Homepage:	https://debmandal.github.io/
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Research Interests

Computational Social Choice, Algorithmic Fairness, Multi-Agent Systems, Reinforcement Learning.

Appointments

Oct 2023 - Present	Assistant Professor at **Dept. of Computer Science** **University of Warwick, UK**
Oct 2021 - Sep 2023	Postdoctoral Researcher at **Max Planck Institute for Software Systems** **Group**: Network Sciences **Mentor**: Dr. Goran Radanovic
Aug 2019 - July 2021	Postdoctoral Fellow at **Data Science Institute** **Columbia University** in the city of New York, NY, USA **Mentors**: Profs. Daniel Hsu and Shipra Agarwal
Jun 2017 - Aug 2017	Research Intern at **Microsoft Research**, Redmond, WA, USA **Mentors**: Dr. Jacob LaRiviere and Dr. Matt Taddy Worked on measuring the causal impact of chatbots on text and call rates of support.microsoft.com

Education

Aug 2014 - Jun 2019	PhD in Computer Science John A. Paulson School of Engineering and Applied Sciences **Harvard University**, Cambridge, MA, USA Thesis: "Decision Making with Heterogeneous Agents: Elicitation, Aggregation, and Causal Effects" Advisor: Prof. David C. Parkes GPA: 3.9/4.0
Aug 2011 - Jul 2013	Master of Engineering Dept. of Computer Science and Automation **Indian Institute of Science**, Bangalore, India Thesis: "Allocation Rules for Multi-Slot Sponsored Search Auctions" Advisor: Prof. Y. Narahari Gpa: 7.6/8.0 (First Class with Distinction)
Jul 2007 - Jun 2011	Bachelor of Engineering Dept. of Computer Science and Techonology **Bengal Engineering and Science University**, Shibpur, India Gpa: 89% (First Class with Honors)

Teaching

Spring 2024	Agent Based Systems (CS 404/924) University of Warwick Jointly with Dr. Paolo Turrini
Spring 2024	Mobile Robotics (CS 313) University of Warwick Jointly with Dr. Claire Rocks
Spring 2023	Agent Based Systems (CS 404/924) University of Warwick Jointly with Dr. Markus Brill
Spring 2018	Teaching Fellow for Human and Machine Predictions, in Societal Context (CS 236) Harvard University Received a *Certificate of Distinction in Teaching*
Spring 2016	Teaching Fellow for Economics and Computation (CS 136) Harvard University
Spring 2013	Teaching Assistant for Game Theory and Mechanism Design (E1 254) Indian Institute of Science
Fall 2012	Teaching Assistant for Algorithms and Programming (ESc-101) Indian Institute of Science

Honors

- **Certificate of Distinction in Teaching**, Spring 2018, Harvard University.
- **NeurIPS'19 Oral Presentation**, "Efficient and Thrifty Voting by Any Means Necessary", (less than 0.5% of papers).
- Paper invited to the **special issue on selected papers from ACM EC'17**, "Peer Prediction with Heterogeneous Users" (only six accepted papers).
- **Columbia Data Science Institute (DSI) Post-Doctoral Fellowship**, 2019-2021.
- **Top-Reviewer Award for a PC member** (NeurIPS-2019, 2021, 2022, and ICML-2020).
- **AISTATS'25 Oral Presentation**, "Corruption Robust Reinforcement Learning with Human Feedback", (Top 2% of accepted papers).

Grants

- **Democratic Metaverse: Recovering Truth from Ranking Data**, (2021-2023) Amount: $33,000.
  - Funded by Penn State IST Seed Award.
  - Jointly with Hadi Hosseini.

Publications

Papers in alphabetical order are denoted by ⋆.

40. Thomas Kleine Buening, Jiarui Gan, Debmalya Mandal, and Marta Kwiatkowska. **Strategyproof Reinforcement Learning from Human Feedback**, In the 39th Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2025. .
39. Jiarui Gan, Rupak Majumdar, Debmalya Mandal, and Goran Radanovic. **Computing Optimal History-Dependent Policies in Stochastic Principal-Agent Problems**, In the 39th Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2025.
38. Debmalya Mandal, Andi Nika, Parameswaran Kamalaruban, Adish Singla, Goran Radanovi , **Corruption Robust Offline Reinforcement Learning with Human Feedback**, In the 28th International Conference on Artificial Intelligence and Statistics (**AIStats**), 2025, Selected for **Oral Presentation**).
37. Debmalya Mandal, and Goran Radanovic, **Performative Reinforcement Learning with Linear Markov Decision Process**, In the 28th International Conference on Artificial Intelligence and Statistics (**AIStats**), 2025.

36. Andi Nika, Jonathan Nöther, Debmalya Mandal, Parameswaran Kamalaruban, Adish Singla, and Goran Radanovic, **Policy Teaching via Data Poisoning in Learning from Human Preferences**, In the 28th International Conference on Artificial Intelligence and Statistics (**AIStats**), 2025.

35. Rilind Sahitaj, Paulius Sasnauskas, Yigit Yalin, Debmalya Mandal, and Goran Radanovic, **Independent Learning in Performative Markov Potential Games**, In the 28th International Conference on Artificial Intelligence and Statistics (**AIStats**), 2025.

34. Hadi Hosseini, Debmalya Mandal, and Amrit Puhan, **Surprisingly Popular Voting for Concentric Rank-Order Models**, In the 36th ACM Web Conference (**WWW**), 2025. [⋆]

33. Vasilis Pollatos, Debmalya Mandal, and Goran Radanovic, **On Corruption-Robustness in Performative Reinforcement Learning**, In the 39th AAAI Conference on Artificial Intelligence (**AAAI**), 2025.

32. Hadi Hosseini, Debmalya Mandal, and Amrit Puhan, **The Effectiveness of Surprisingly Popular Voting with Partial Preferences**, In the 38th Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2024. [⋆]

31. Nam Tran, The-Anh Ta, Debmalya Mandal, and Long Tran-Thanh, **Symmetric Linear Bandits with Hidden Symmetry**, In the 38th Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2024.

30. Nam Tran, The-Anh Ta, Shuqing Shi, Debmalya Mandal, Yali Du, Long Tran-Thanh, **Learning the Expected Core of Strictly Convex Stochastic Cooperative Games**, In the 38th Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2024.

29. Stelios Triantafylliou, Aleksa Sukovic, Debmalya Mandal, and Goran Radanovic. **Agent Specific Effects: A Causal Effect Propagation Analysis in Multi-Agent MDPs**, In the 41st International Conference on Machine Learning (**ICML**), 2024.

28. Andi Nika, Debmalya Mandal, Parameswaran Kamalaruban, Georgios Tzannetos, Goran Radanovi , Adish Singla. **Reward Model Learning vs. Direct Policy Optimization: A Comparative Analysis of Learning from Human Preferences**, In the 41st International Conference on Machine Learning (**ICML**), 2024.

27. Ben Rank, Stelios Triantafyllou, Debmalya Mandal, and Goran Radanovic. **Performative Reinforcement Learning in Gradually Shifting Environments**. In the 40th International Conference on Uncertainty in Artificial Intelligence (**UAI**), 2024.

26. Andi Nika, Debmalya Mandal, Adish Singla, and Goran Radanovic. **Corruption-Robust Offline Two-Player Zero-Sum Markov Games**. In the 27th International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2024.

25. Jiarui Gan, Rupak Majumdar, Debmalya Mandal, and Goran Radanovic. **Sequential Principal-Agent Problems with Communication: Efficient Computation and Learning (Extended Abstract)**. Proc. of the 23rd International Conference on Autonomous Agents and Multiagent Systems (**AAMAS**), 2024.

24. Debmalya Mandal, Stelios Triantafyllou, and Goran Radanovic. **Performative Reinforcement Learning**. In the 40th International Conference on Machine Learning (**ICML**), 2023.

23. Mohammad Mohammadi, Jonathan Nöther, Debmalya Mandal, Adish Singla, and Goran Radanovic. **Implicit Poisoning Attacks in Two-Agent Reinforcement Learning: Adversarial Policies for Training-Time Attacks**. Proc. of the 22nd International Conference on Autonomous Agents and Multiagent Systems (**AAMAS**), 2023.

22. Debjyoti Kar, Mert Kosan, Debmalya Mandal, Sourav Medya, Arlei Silva, Palash Dey, and Swagato Sanyal. **Representation-Based Individual Fairness in k-Clustering (Extended Abstract)**. Proc. of the 22nd International Conference on Autonomous Agents and Multiagent Systems (**AAMAS**), 2023.

21. Debmalya Mandal, Goran Radanovic, Jiarui Gan, Adish Singla, and Rupak Majumdar. **Online Reinforcement Learning with Uncertain Episode Lengths**. In the 37th AAAI Conference on

Artificial Intelligence (**AAAI**), 2023.

20. Jiarui Gan, Annika Hennes, Rupak Majumdar, Debmalya Mandal, and Goran Radanovic. **Markov Decision Processes with Time-Varying Geometric Discounting**. In the 37th AAAI Conference on Artificial Intelligence (**AAAI**), 2023. [⋆]

19. Samuel Deng, Yilin Guo, Daniel Hsu, and Debmalya Mandal. **Learning Tensor Representations for Meta-Learning**. In the 25th International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2022. [⋆]

18. Nick Bishop, Hau Chan, Debmalya Mandal, and Long Tran-Thanh. **Sequential Blocked Matching**. In the 36th AAAI Conference on Artificial Intelligence (**AAAI**), 2022. [⋆]

17. Debmalya Mandal, Sourav Medya, Brian Uzzi, and Charu Aggarwal. **Meta-Learning with Graph Neural Networks: Methods and Applications**. In the ACM SIGKDD Explorations Newsletter (**SIGKDD**), 2021.

16. Hadi Hosseini, Debmalya Mandal, Nisarg Shah, and Kevin Shi. **Surprisingly Popular Voting Recovers Rankings, Surprisingly!**. The 30th International Joint Conference on Artificial Intelligence (**IJCAI**), 2021. [⋆]

15. Debmalya Mandal, Samuel Deng, Suman Jana, Jeannette M. Wing, and Daniel Hsu. **Ensuring Fairness Beyond the Training Data**. Thirty-Fourth Conference on Neural Information Processing Systems (**NeurIPS**), 2020.

14. Nick Bishop, Hau Chan, Debmalya Mandal, and Long Tran-Thanh. **Adversarial Blocking Bandits**. In the 34th Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2020. [⋆]

13. Debmalya Mandal, Nisarg Shah, and David Woodruff. **Optimal Communication-Distortion Tradeoff in Voting**. Twenty-First ACM Conference on Economics and Computation (**EC**), pp. 795-813, 2020. [⋆]

12. Debmalya Mandal, Goran Radanovic, and David C. Parkes. **The Effectiveness of Peer Prediction in Long-Term Forecasting**. Thirty-Fourth AAAI Conference on Artificial Intelligence (**AAAI**), pp. 2160-2167, 2020. Selected for **Poster Spotlight**.

11. Debmalya Mandal, Nisarg Shah, and David Woodruff. **Optimal Communication-Distortion Tradeoff in Voting**. Twenty-First ACM Conference on Economics and Computation (**EC**), pp. 795-813, 2020. [⋆]

10. Arpit Agarwal, Debmalya Mandal, David C. Parkes, and Nisarg Shah. **Peer Prediction with Heterogeneous Users**. ACM Transactions on Economics and Computation, vol. 8, no. 1, pp. 1-34, 2020. [⋆]

9. Debmalya Mandal, Ariel Procaccia, Nisarg Shah, and David Woodruff. **Efficient and Thrifty Voting by Any Means Necessary**. Thirty-third Conference on Neural Information Processing Systems (**NeurIPS**), pp. 7178-7189, 2019, Selected for **Oral Presentation (One of 36 Out of 1428 Accepted Papers)**. [⋆]

8. Yang Liu, Goran Radanovic, Christos Dimitrakakis, Debmalya Mandal, and David Parkes. **Calibrated Fairness in Bandits**. Fourth Workshop on Fairness, Accountability and Transparency in Machine Learning (**FAT/ML**), 2017. (Also at the Conference on Digital Experimentation (CODE), 2017)

7. Arpit Agarwal, Debmalya Mandal, David Parkes, and Nisarg Shah. **Peer Prediction with Heterogeneous Users**. Proc. of 18th ACM Conference on Economics and Computation (**EC**), pp. 81-98, 2017. Invited for **Special Issue on Selected Papers from EC-2017**. [⋆]

6. Debmalya Mandal, and David Parkes. **Correlated Voting**. Proc. of 25th International Joint Conference on Artificial Intelligence (**IJCAI**), pp. 366-372, 2016.

5. Arpita Biswas, Shweta Jain, Debmalya Mandal, and Yadati Narahari. **A Truthful Budget Feasible Multi-Armed Bandit Mechanism for Crowdsourcing Time Critical Tasks**. Proc. of the 14th International Conference on Autonomous Agents and Multiagent Systems (**AAMAS**), pp. 1101-1109, 2015.

4. Arupratan Ray, Debmalya Mandal, and Yadati Narahari. **Profit Maximizing Prior-free Multi-unit Procurement Auctions with Capacitated Sellers (Extended Abstract)**. Proc. of the 14th International Conference on Autonomous Agents and Multiagent Systems (**AAMAS**), pp. 1753-1754, 2015.
3. Rohith D. Vallam, Priyanka Bhatt, Debmalya Mandal, and Y. Narahari. **A Stackelberg Game Approach for Incentivizing Participation in Online Educational Forums with Heterogeneous Student Population**. Proc. of the 29th AAAI Conference on Artificial Intelligence (**AAAI**), pp. 1043-1049, 2015.
2. Praphul Chandra, Yadati Narahari, Debmalya Mandal, and Prasenjit Dey. **Novel Mechanisms for Online Crowdsourcing with Unreliable, Strategic Agents**. Proc. of the 29th AAAI Conference on Artificial Intelligence (**AAAI**), pp. 1256-1262, 2015.
1. Debmalya Mandal, and Yadati Narahari. **A Novel Ex-Post Truthful Mechanism for Multi-Slot Sponsored Search Auctions (Extended Abstract)**. Proc. of the 13th International Conference on Autonomous Agents and Multiagent Systems (**AAMAS**), pp. 1555-1556, 2014.

Working Papers (Under Submission)

3. Debmalya Mandal, Paulius Sasnauskas, and Goran Radanovic. **Distributionally Robust Reinforcement Learning with Human Feedback**, 2025.
2. Shuqing Shi, Nam Phuong Tran, Hao Liang, Debmalya Mandal, Long Tran-Thanh, and Yali Du, **BRIDGE: Bi-level Reinforcement Learning for Dynamic Group Structure in Coalition Formation Games**, 2025.
1. Debmalya Mandal, and Jiarui Gan. **Socially Fair Reinforcement Learning**. ArXiv preprint arXiv:2208.12584, 2024.

Papers at Peer-Reviewd Workshops

2. Debmalya Mandal, and David Parkes. **Weighted Tensor Completion for Time-Series Causal Inference**. (under submission), preliminary version appeared in NeurIPS Workhop on Causal Learning, 2018.
1. Debmalya Mandal, Matthew Leifer, David Parkes, Galen Pickard, and Victor Shnayder. **Peer Prediction with Heterogeneous Tasks**. NIPS Workshop on Crowdsourcing and Machine Learning (CrowdML-NIPS), 2016.

Talks

13. **Peformativity in Reinforcement Learning**, Department Colloquium, Tata Institute of Fundamental Research, 2024.
12. **AI for Societal Decision-Making**, Department Colloquium, Penn State College of Information Science and Technology, 2024.
11. **AI for Societal Decision-Making**, Department Seminar, University of Warwick, Department of Computer Science, 2023.
10. **Online Reinforcement Learning with Uncertain Episode Lengths**, 37th AAAI Conference on Artificial Intelligence, 2023.
9. **Surprisingly Popular Voting Recovers Rankings, Surprisingly!**, 30th International Joint Conference on Artificial Intelligence, Virtual, Jul-2021.
8. **Ensuring Fairness Beyond the Training Data**, Columbia University Data Science Day, Apr-2021.
7. **Efficient and Thrifty Voting**, Google Research, Mar-2021.
6. **Optimal Communication-Distortion Trade-off in Voting**, 21st ACM Conference on Economics and Computation (EC), Virtual, Jul-2020.
5. **The Effectiveness of Peer Prediction in Long-Term Forecasting**, 34th AAAI Conference on Artificial Intelligence (AAAI), New York, USA, Feb-2020.

4. **Efficient and Thrifty Voting by Any Means Necessary**, 33rd Conference on Neural Information Processing Systems (NeurIPS), Vancouver, Canada, Dec-2019.
3. **Correlated Voting**, 25th International Joint Conference on Artificial Intelligence (IJCAI), New York, July-2016.
2. **Peer Prediction with Heterogeneous Users**, 18th ACM Conference on Economics and Computation (EC), Cambridge, MA, Jun-2017.
1. **Peer Prediction with Heterogeneous Users**, Bayesian Crowd Workshop, Rotterdam, Netherlands, Jul-2017.

Service

- **Area Chair / Senior Program Committee**, NeurIPS 2024-2025, ICML 2025, IJCAI 2025.
- **Program Committee / Reviewing**, ICML 2019-2024, NeurIPS 2019-2023 AAAI 2020-2023 IJCAI 2020, 2023, EC 2020, ICLR 2021-2023, AAMAS 2021, 2023 AISTATS 2021, COLT 2021-2024.
- **Journal Reviewing**, Journal of Artificial Intelligence Research (JAIR), Journal of Machine Learning Research (JMLR), Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS), Royal Society Open Science (RSOS).
- **Member of PGR Comittee**, Department of Computer Science, University of Warwick, 2024-25.
- **Seminar Coordinator**, EconCS group, Harvard University, Fall 2016 and Spring 2017.

Current PhD Students

- Jiaying Lin, Graduate Student, Department of Computer Science, University of Warwick (Since October 2024).

Past Mentoring Experience

- Ben Rank, Research Intern, Max Planck Institute for Software Systems. **Stateful Performative Reinforcement Learning**, Summer 2022.
- Samuel Deng, Masters Student, Columbia University. **Fairness Checking**, Fall 2019.
- Kevin Chen, Undergrduate Student, Harvard University. **Causal Inference for Matching Markets**, Fall 2018.
- Kojin Oshiba, Undergraduate Student, Harvard University. **Robust Counterfactual Fairness**, Spring 2018.
- Matthew Leifer, Undergraduate Student, Harvard University. **Peer Prediction with Heterogeneous Tasks**, Summer 2016.