Palash Dey

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Current Affiliation

Assistant Professor in the Department of Computer Science and Engineering, IIT Kharagpur.

Research Interest

I am broadly interested in theoretical computer science. My current research focuses on algorithmic game theory, computational social choice, and parameterized algorithms.

Professional Services

▶ Newsletter and Social Media Chair of IEEE Kharagpur Section (2021-22)

▶ Senior Program Committee member: AAAI (MANY TIMES)

▶ Program Committee member of following conferences: IJCAI, AAAI, AAMAS, ECAI, COMSOC (MANY TIMES).

▶ Reviewed papers for following conferences: STOC, CSR, WINE, FSTTCS, PODS, ICALP.

▶ Reviewed papers for following journals: Discrete Applied Mathematics, Artificial Intelligence, Autonomous Agents and Multi-Agent Systems, Theoretical Computer Sciences.

Awards and Achievements

▶ **ACM India Eminent Speaker** in 2024-26.

▶ **INAE Young Associate** in 2023.

▶ **Fellow of West Bengal Academy of Science and Technology**, Government of West Bengal, India in 2022.

▶ **ACM India Doctoral Dissertation Award** in 2018.

▶ **Best Ph.D. Thesis Award** in **Department of CSA, IISc** in 2018.

▶ **INSPIRE faculty award** in 2017.

▶ **Google India Ph.D. fellowship award** in 2015 for the period 2015-19.

▶ **Gold medal** for the academic year 2012-13 in Indian Institute of Science.

▶ **Computer Society of India Medal (Bangalore chapter)** as best Master of Engineering (M.E.) student in the Department of Computer Science and Automation in Indian Institute of Science.

▶ **Topper of Master of Engineering** batch 2011-13 in the Department of Computer Science and Automation in Indian Institute of Science.

▶ Travel grant from **Google India** in 2017.

▶ **Best presentation award in EECS Research Students Symposium 2016** in Indian Institute of Science.

▶ Student travel/volunteer scholarship for IJCAI 2016, AAMAS 2015.

Research Projects

▶ "Computational Social Choice with Focus on Networks and Fairness," SERB Core Research Grant for 2023-26 (grant sanctioned INR 40 lac).

▶ "Resolving Some Fundamental Problems in Computational Social Choice," DST-INSPIRE Faculty Fellowship for 2017-22 (grant amount was INR 35 lac).

► "Voting and Society," Scheme for Innovative Research and Development (ISIRD), IIT Kharagpur for 2019-22 (grant amount was INR 9.75 lac).

Workshops/Conferences Organized

► Fourth Symposium on Recent Trends in Algorithms in Kolkata in 2024.

► Workshop on Game Theory and Artificial Intelligence (GAME-ARTS) in IISc Bangalore in 2024.

► Fifth Annual International Conference on Algorithms and Discrete Applied Mathematics (CALDAM) in IIT Kharagpur in 2019.

Refereed Journal Articles

[J17] Koustav De, Harshil Mittal, *Palash Dey*, Neeldhara Misra. *"Parameterized Aspects of Distinct Kemeny Rank Aggregation"*. **Acta Informatica**, volume 61, pp. 401-414, **2024**. Keywords: rank aggregation, Kemeny, parameterized complexity, enumeration, diversity.
Remark: A preliminary version of this work was appeared in Proc. 10th *Annual International Conference on Algorithms and Discrete Applied Mathematics (CALDAM-24)*.

[J16] Arnab Maiti and *Palash Dey*. *"Query Complexity of Tournament Solutions"*. **Theoretical Computer Science**, volume 991, pp. 114422, **2024**. Keywords: query complexity, voting, tournament, algorithm, theory.
Remark: A preliminary version of this work was appeared in Proc. 31st *AAAI Conference on Artificial Intelligence (AAAI-17)*.

[J15] Arnab Maiti and *Palash Dey*. *"On Parameterized Complexity of Binary Networked Public Goods Game"*. **Algorithmica**, volume 86(1), pp. 307-333, **2024**. Keywords: binary networked public goods game, network, game theory, algorithm, parameterized algorithm.
Remark: A preliminary version of this work was appeared in Proc. 21st *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-22)*.

[J14] *Palash Dey* and Neeldhara Misra. *"On the Exact Amount of Missing Information that makes Finding Possible Winners Hard"*. **Journal of Computer and System Sciences**, volume 135, pp. 32–54, **2023**. Keywords: voting, possible winner, incomplete information, NP-completeness, algorithm.
Remark: A preliminary version of this work was appeared in Proc. 42nd *International Symposium on Mathematical Foundations of Computer Science (MFCS-17)*.

[J13] *Palash Dey*. *"Priced Gerrymandering"*. In **Theoretical Computer Science**, volume 972, pp. 114080, **2023**. Keywords: voting, social choice, bribery, safe, game theory, algorithm, parameterized algorithm.
Remark: A preliminary version of this work was appeared in Proc. 21st *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-22)*.

[J12] Neel Karia, Faraaz Mallick, and *Palash Dey*. *"How Hard is Safe Bribery?"*. In **Theoretical Computer Science**, volume 979, pp. 114156, **2023**. Keywords: voting, social choice, bribery, safe, game theory, algorithm, parameterized algorithm.
Remark: A preliminary version of this work was appeared in Proc. 21st *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-22)*.

[J11] *Aditya Anand and Palash Dey*. *"Distance Restricted Manipulation in Voting"*. In **Theoretical Computer Science**, volume 891, pp. 149–165, **2021**. Keywords: voting, algorithm, manipulation, control, theory.

[J10] *Palash Dey, Neeldhara Misra, Swaprava Nath, and Garima Shakya*. *"A Parameterized Perspective on Protecting Elections"*. In **Theoretical Computer Science**, volume 874, pp. 15–31, **2021**. Keywords: voting, algorithm, bribery, control, theory.
Remarks: A preliminary version of this work was appeared in Proc. 28th *International Joint Conference on Artificial Intelligence (IJCAI-19)*.

[J9] *Arnab Bhattacharyya and Palash Dey*. *"Predicting Winner and Estimating Margin of Victory in Elections using Sampling"*. In **Artificial Intelligence**, volume 296, pp. 103476, **2021**. Keywords: voting, sampling, prediction, margin of victory, theory.
Remarks: Part of this work was appeared in Proc. 14th *International Conference on Autonomous Agents and*

Multiagent Systems (AAMAS-15) and in Proc. 24th *International Joint Conference on Artificial Intelligence (IJCAI-15)*.

[J8] *Palash Dey*. *"Local Distance Restricted Bribery in Voting"*. In ***Theoretical Computer Science***, volume 849, pp. 1–21, **2021**. Keywords: voting, algorithm, bribery, control, theory.
Remarks: A preliminary version of this work was appeared in Proc. 18th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-19)*.

[J7] *Palash Dey*, Neeldhara Misra, and Yadati Narahari. *"Parameterized Dichotomy of Choosing Committees Based on Approval Votes in the Presence of Outliers"*. In ***Theoretical Computer Science***, volume 783, pp. 53–70, **2019**. Keywords: voting, algorithm, approval ballot, committee selection, outliers, parameterized complexity, theory.
Remarks: A preliminary version of this work was appeared in Proc. 16th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-17)*.

[J6] Arnab Bhattacharyya, *Palash Dey*, and David P. Woodruff. *"An Optimal Algorithm for ℓ_1-Heavy Hitters in Insertion Streams and Related Problems"*. In ***ACM Transactions on Algorithms***, volume 15, number 1, pp. 2:1–2:27, **2019**. Keywords: heavy hitters, insertion, stream, large data, algorithm, theory.
Remarks: A preliminary version of this work was appeared in Proc. *ACM SIGMOD-SIGACT-SIGAI Symposium on Principles of Database Systems (PODS 2016)*.

[J5] *Palash Dey*. *"Manipulative Elicitation – A New Attack on Elections with Incomplete Preferences"*. In ***Theoretical Computer Science***, volume 731, pp. 36-49, **2018**. Keywords: voting, manipulation, elicitation, algorithm, theory.
Remarks: A preliminary version of this work was appeared in Proc. 32nd *AAAI Conference on Artificial Intelligence (AAAI 2018)*.

[J4] *Palash Dey*, Neeldhara Misra, and Yadati Narahari. *"Complexity of Manipulation with Partial Information in Voting"*. In ***Theoretical Computer Science***, volume 726, pp. 78-99, **2018**. Keywords: voting, algorithm, manipulation, partial information, theory.
Remarks: A preliminary version of this work was appeared in Proc. 25th *International Joint Conference on Artificial Intelligence (IJCAI-16)*.

[J3] *Palash Dey*, Neeldhara Misra, and Yadati Narahari. *"Frugal Bribery in Voting"*. In ***Theoretical Computer Science***, volume 676, pp. 15-32, May **2017**. Keywords: voting, bribery, manipulation, frugal, algorithm, theory.
Remarks: A preliminary version of this work was appeared in Proc. 30th *AAAI Conference on Artificial Intelligence (AAAI-16)*.

[J2] *Palash Dey*, Neeldhara Misra, and Yadati Narahari *"Kernelization Complexity of Possible Winner and Coalitional Manipulation Problems in Voting"*. In ***Theoretical Computer Science***, volume 616, pp. 111-125, February **2016**. Keywords: voting theory, possible winner, kernelization, parameterized complexity, algorithm, theory.
Remarks: A preliminary version of this work was appeared in Proc. 14th *International Conference on Autonomous Systems and Multiagent Systems (AAMAS-15)*.

[J1] Palash Dey and Yadati Narahari. *"Asymptotic Collusion-Proofness of Voting Rules: The Case of Large Number of Candidates"*. In ***Studies in Microeconomics***, volume 3(2), pp. $120 - 139$, December **2015**. Keywords: voting theory, asymptotic collusion-proofness.
Remarks: Also appeared in Proc. 13th *International Conference on Autonomous Systems and Multiagent Systems (AAMAS-14) as an extended abstract*.

Peer Reviewed Conference Publications

[C44] *Umang Bhaskar, Juhi Chaudhary, Palash Dey*. *"Maximizing Value in Challenge the Champ Tournaments"*. In Proc. 24th *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-25**)*, Detroit, Michigan, USA **2025**. Keywords: tournament, challenge the champ, algorithm, theory. (Acceptance rate was $\sim$ 24.50%.)

[C43] *Koustav De, Palash Dey, Swagato Sanyal*. *"Voter Participation Control in Online Polls"*, extended abstract. In Proc. 24th *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-25**)*, Detroit,

Michigan, USA **2025**. Keywords: voting, online poll, social network, control, algorithm, theory. (Acceptance rate was ∼ 40%.)

[C42] *Palash Dey, Ashlesha Hota, Sudeshna Kolay and Sipra Singh*. "*Knapsack with Vertex Cover, Set Cover, and Hitting Set*". In Proc. 35th *International Symposium on Algorithms and Computation (**ISAAC-24**)*, Sydney, Australia **2024**. Keywords: algorithm, approximation algorithm, parameterized algorithm, knapsack, vertex cover, set cover, hitting set. (Acceptance rate was ∼ 29%.)

[C41] *Adway Mitra and Palash Dey*. "*Evaluating District-based Election Surveys with Synthetic Dirichlet Likelihood*". In Proc. 23rd *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-24**)*, Auckland, New Zealand **2024**. Keywords: election, survey, polling, sampling, prediction. (Acceptance rate was ∼ 25%.)

[C40] *Rangeet Bhattacharyya, Parvik Dave, Palash Dey and Swaprava Nath*. "*Optimal Referral Auction Design*". In Proc. 23rd *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-24**)*, Auckland, New Zealand **2024**. Keywords: auction, mechanism design, incentive compatibility, network. (Acceptance rate was ∼ 25%.)

[C39] *Palash Dey, Sudeshna Kolay and Sipra Singh*. "*Knapsack: Connectedness, Path, and Shortest-Path*". In Proc. 16th *Latin American Theoretical Informatics Symposium (**LATIN-24**)*, Chile **2024**. Keywords: algorithm, parameterized algorithm, knapsack, shortest path, path, connected.

[C38] *Arnab Maiti and Palash Dey*. "*On Binary Networked Public Goods Game with Altruism*". In Proc. 16th *Latin American Theoretical Informatics Symposium (**LATIN-24**)*, Chile **2024**. Keywords: algorithm, game theory, public goods, altruism.

[C37] *Koustav De, Harshil Mittal, Palash Dey and Neeldhara Misra*. "*Parameterized Aspects of Distinct Kemeny Rank Aggregation*". In Proc. 10th *Annual International Conference on Algorithms and Discrete Applied Mathematics (**CALDAM-24**)*, IIT Bhilai, India **2024**. Keywords: rank aggregation, Kemeny, parameterized complexity, enumeration, diversity.

[C36] *Debajyoti Kar, Mert Kosan, Debmalya Mandal, Sourav Medya, Arlei Silva, Palash Dey, and Swagato Sanyal*. "*Feature-based Individual Fairness in k-Clustering*", extended abstract. In Proc. 22nd *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-23**)*, London, UK **2023**. Keywords: clustering, fairness, individual fairness, algorithm, approximation. (Acceptance rate was ∼ 45%.)

[C35] *Debajyoti Kar, Palash Dey, and Swagato Sanyal*. "*Sampling-Based Winner Prediction in District-Based Elections*", extended abstract. In Proc. 22nd *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-23**)*, London, UK **2023**. Keywords: voting, sampling, prediction, winner, estimation, algorithm. (Acceptance rate was ∼ 45%.)

[C34] *Arnab Maiti and Palash Dey*. "*Parameterized Algorithms for Kidney Exchange*". In Proc. 31st *International Joint Conference on Artificial Intelligence (**IJCAI-22**)*, Vienna, Austria. (Acceptance rate was ∼ 15%.) Also as an extended abstract in Proc. 21st *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-22**)*, Auckland, New Zealand (virtual) **2022**. Keywords: kidney exchange, game theory, algorithm, cycle packing, parameterized algorithm.

[C33] *Neel Karia, Faraaz Mallick, and Palash Dey*. "*How Hard is Safe Bribery?*". In Proc. 21st *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-22**)*, Auckland, New Zealand (virtual) **2022**. Keywords: voting, social choice, bribery, safe, game theory, algorithm, parameterized algorithm. (Acceptance rate was ∼ 26%.)

[C32] *Arnab Maiti and Palash Dey*. "*On Parameterized Complexity of Binary Networked Public Goods Game*". In Proc. 21st *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-22**)*, Auckland, New Zealand (virtual) **2022**. Keywords: binary networked public goods game, network, game theory, algorithm, parameterized algorithm. (Acceptance rate was ∼ 26%.)

[C31] *Palash Dey*. "*Priced Gerrymandering*", extended abstract. In Proc. 21st *International Conference on Autonomous Agents and Multiagent Systems (**AAMAS-22**)*, Auckland, New Zealand (virtual) **2022**. Keywords: gerrymandering, theory, algorithm, voting, district. (Acceptance rate was ∼ 40%.)

[C30] *Nuno Mota, Negar Mohammadi, Palash Dey, Krishna P. Gummadi and Abhijnan Chakraborty*. *"Fair Partitioning of Public Resources: Redrawing District Boundary to Minimize Spatial Inequality in School Funding"*. In Proc. 30th *The Web Conference (WWW-21)*, Ljubljana, Slovenia **2021**. Keywords: fairness, graph partitioning, districts, resource allocation. (Acceptance rate was ∼ 21%.)

[C29] *Palash Dey, Suman Kalyan Maity, Sourav Medya, and Arlei Silva*. *"Network Robustness via Global k-cores"*. In Proc. 20th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-21)*, London, United Kingdom **2021**. Keywords: network design, core. (Acceptance rate was ∼ 25%.)

[C28] *Palash Dey, Arnab Maiti, and Amatya Sharma*. *"On Parameterized Complexity of Liquid Democracy"*. In Proc. 7th *Annual International Conference on Algorithms and Discrete Applied Mathematics*(**CALDAM-21**), IIT Ropar, India. **2021**.

[C27] *Palash Dey, Jaikumar Radhakrishnan and Santhoshini Velusamy*. *"Improved Explicit Data Structures in the Bit-probe Model using Error Correcting Codes"*. In Proc. 45th *International Symposium on Mathematical Foundations of Computer Science (MFCS-20)*, Charles University. Prague, Czechia **2020**. Keywords: data structure, bit probe, error correcting code. (Acceptance rate was ∼ 33%.)

[C26] *Chinmay Sonar, Palash Dey, and Neeldhara Misra*. *"On the complexity of Winner Verification and Candidate Winner for Multiwinner Voting Rules"*. In Proc. 29th *International Joint Conference on Artificial Intelligence (IJCAI-20)*, Yokohama, Japan **2020**. Keywords: multi-winner rule, computational complexity. (Acceptance rate was ∼ 13%.)

[C25] *Palash Dey and Sourav Medya*. *"Manipulating Node Similarity Measures in Networks"*. In Proc. 19th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-20)*, Auckland, New Zealand **2020**. Keywords: network design, parameterized complexity. (Acceptance rate was ∼ 23%.)

[C24] *Ana-Andreea Stoica, Abhijnan Chakraborty, Palash Dey, and Krishna Gummadi*. *"Minimizing Margin of Victory for Fair Political and Educational Districting"*. In Proc. 19th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-20)*, Auckland, New Zealand **2020**. Keywords: voting, margin of victory, fairness, districts algorithm. (Acceptance rate was ∼ 23%.)

[C23] *Palash Dey, Neeldhara Misra, Swaprava Nath, and Garima Shakya*. *"A Parameterized Perspective on Protecting Elections"*. In Proc. 28th *International Joint Conference on Artificial Intelligence (IJCAI-19)*, Macao, China, **2019**. Keywords: voting, protection, parameterized complexity, theory, algorithm. (Acceptance rate was ∼ 18%.)

[C22] *Palash Dey, Swaprava Nath, and Garima Shakya*. *"Testing Preferential Domains using Sampling"*. In Proc. 18th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-19)*, Montreal, Canada, **2019**. Keywords: social domain, sampling, testing, single peaked, single crossing. (Acceptance rate was ∼ 24%.)

[C21] *Palash Dey and Sourav Medya*. *"Covert Networks: How Hard is It to Hide?"*. In Proc. 18th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-19)*, Montreal, Canada, **2019**. Keywords: social network, covert network, influence, complexity. (Acceptance rate was ∼ 24%.)

[C20] *Palash Dey*. *"Local Distance Restricted Bribery in Voting"*, extended abstract. In Proc. 18th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-19)*, Montreal, Canada, **2019**. Keywords: voting, complexity, bribery, campaigning. (Acceptance rate was ∼ 52%.)

[C19] *Palash Dey, Pravesh Kothari, and Swaprava Nath*. *"The Social Network Effect on Surprise in Elections"*. In Proc. 6th *ACM IKDD CoDS and 24th COMAD (CODS-COMAD-2019)*. Keywords: election, surprise, social networks, voting, prediction. (Acceptance rate was ∼ 25%.)

[C18] *Palash Dey*. *"Manipulative Elicitation – A New Attack on Elections with Incomplete Preferences"*. In Proc. 32nd *AAAI Conference on Artificial Intelligence (AAAI-18)*. Keywords: voting, manipulation, elicitation, algorithm, theory. (Acceptance rate was 24.6%.)

[C17] *Palash Dey*. *"Query Complexity of Tournament Solutions"*. In Proc. 31st *AAAI Conference on Artificial Intelligence (AAAI-17)*, pp. 2992 − 2998, San Francisco, USA, **2017**. Keywords: query complexity, voting, tournament,

algorithm, theory. (Acceptance rate was 24.6%. Was chosen for oral presentation. Only 0.02% papers were chosen for oral presentation)

[C16] *Palash Dey* and Neeldhara Misra. "*On the Exact Amount of Missing Information that makes Finding Possible Winners Hard*". In Proc. 42nd *International Symposium on Mathematical Foundations of Computer Science (MFCS-17)*, Aalborg, Denmark, **2017**. Keywords: voting, possible winner, incomplete information, NP-completeness, algorithm. (Acceptance rate was 41.7%.)

[C15] *Palash Dey*, Neeldhara Misra, and Yadati Narahari. "*Parameterized Dichotomy of Choosing Committees Based on Approval Votes in the Presence of Outliers*". In Proc. 16th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-17)*, pp. $42 - 50$, São Paulo, Brazil, **2017**. Keywords: committee selection, voting, outliers, parameterized complexity, dichotomy, algorithm. (Acceptance rate was 26%.)

[C14] *Palash Dey*, Nimrod Talmon, and Otniel van Handel. "*Proportional Representation in Vote Streams*". In Proc. 16th *International Conference on Autonomous Agents and Multiagent Systems (AAMAS-17)*, pp. $15 - 23$, São Paulo, Brazil, **2017**. Keywords: data stream, voting, proportional representation, algorithm, theory. (Acceptance rate was 26%.)

[C13] Arnab Bhattacharyya, *Palash Dey*, and David P. Woodruff. "*An Optimal Algorithm for ℓ_1-Heavy Hitters in Insertion Streams and Related Problems*". In Proc. *ACM SIGMOD-SIGACT-SIGAI Symposium on Principles of Database Systems (PODS-16)*, pp. $385 - 400$, San Francisco, USA, **2016**. Keywords: heavy hitters, insertion, stream, large data, algorithm, theory. (Acceptance rate was 33%.)

[C12] *Palash Dey* and Neeldhara Misra. "*Elicitation for Preferences Single Peaked on Trees*". In Proc. 25th *International Joint Conference on Artificial Intelligence (IJCAI-16)*, pp. $215 - 221$, New York, USA, **2016**. Keywords: voting, algorithm, single peaked domain, elicitation, theory. (Acceptance rate was 24%.)

[C11] *Palash Dey* and Neeldhara Misra. "*Preference Elicitation For Single Crossing Domain*". In Proc. 25th *International Joint Conference on Artificial Intelligence (IJCAI-16)*, pp. $222 - 228$, New York, USA, **2016**. Keywords: voting, algorithm, single crossing domain, elicitation, theory. (Acceptance rate was 24%.)

[C10] *Palash Dey*, Neeldhara Misra, and Yadati Narahari. "*Complexity of Manipulation with Partial Information in Voting*". In Proc. 25th *International Joint Conference on Artificial Intelligence (IJCAI-16)*, pp. $229 - 235$, New York, USA, **2016**. Keywords: voting, algorithm, manipulation, partial information, theory. (Acceptance rate was 24%.)

[C9] *Palash Dey*, Neeldhara Misra, and Yadati Narahari. "*Frugal Bribery in Voting*". In Proc. 30th *AAAI Conference on Artificial Intelligence (AAAI-16)*, pp. $2466 - 2672$, vol. 4, Phoenix, Arizona, USA, **2016**. Keywords: voting, bribery, manipulation, frugal. (Acceptance rate was 25.8%.)

[C8] *Palash Dey* and Yadati Narahari. "*Estimating the Margin of Victory of Elections using Sampling*". In Proc. 24th *International Joint Conference on Artificial Intelligence (IJCAI-15)*, pp. $1120 - 1126$, Buenos Aires, Argentina, **2015**. Keywords: voting, margin of victory, estimation, sampling, algorithm, theory. (Acceptance rate was 28.8%.)

[C7] *Palash Dey* and Arnab Bhattacharyya. "*Sample Complexity for Winner Prediction in Elections*". In Proc. 14th *International Conference on Autonomous Systems and Multiagent Systems (AAMAS-15)*, pp. $1421 - 1430$, Istanbul, Turkey, **2015**. Keywords: voting theory, polling, winner prediction, sampling, algorithm, theory. (Acceptance rate was 25%.)

[C6] *Palash Dey*, Neeldhara Misra, and Yadati Narahari. "*Detecting Possible Manipulators in Elections*". In Proc. 14th *International Conference on Autonomous Systems and Multiagent Systems (AAMAS-15)*, pp. $1441 - 1450$, Istanbul, Turkey, **2015**. Keywords: voting, manipulation, detection, algorithm, theory. (Acceptance rate was 25%.)

[C5] *Palash Dey*, Neeldhara Misra, and Yadati Narahari "*Kernelization Complexity of Possible Winner and Coalitional Manipulation Problems in Voting*". In Proc. 14th *International Conference on Autonomous Systems and Multiagent Systems (AAMAS-15)*, pp. $87 - 96$, Istanbul, Turkey, **2015**. Keywords: voting, possible winner, kernelization, parameterized complexity, algorithm, theory. (Acceptance rate was 25%.)

[C4] *Palash Dey*. *"Computational Complexity of Fundamental Problems in Social Choice Theory (Doctoral Consortium)"*. In Proc. 14th *International Conference on Autonomous Systems and Multiagent Systems (AAMAS-15)*, pp. 1973-1974, Istanbul, Turkey, **2015**.

[C3] *Palash Dey* and Yadati Narahari *"Asymptotic Collusion-Proofness of Voting Rules: The Case of Large Number of Candidates"*, extended abstract. In Proc. 13th *International Conference on Autonomous Systems and Multiagent Systems (AAMAS-14)*, pp. $1419 - 1420$, Paris, France,**2014**. Keywords: voting theory, asymptotic collusion-proofness, theory. (Acceptance rate was 46%.)

[C2] *Palash Dey*, Prachi Goyal, and Neeldhara Misra *"UNO Gets Easier for a Single Player"*. In Proc. 7th *International Conference on Fun with Algorithms (FUN-14)*, pp. $147 - 157$, Lipari Island, Sicily, Italy, **2014**. Keywords: UNO, parameterized complexity. (Acceptance rate was 59%.)

[C1] *Palash Dey*, A. Kundu, M. K. Naskar, A. Mukherjee, and A. Nasipuri *"Dynamic Multipath Bandwidth Provisioning with Jitter, Throughput and SLA constraint in MPLS over WDM network"*. In Proc. 11th *International Conference on Distributed Computing and Networking (ICDCN-10)*, pp. $376 - 391$, Kolkata, India, **2010**. Keywords: optical networks. (Acceptance rate was 21%.)

Research Visits Abroad

Dec 1-21 2024:	University of Tokyo, Japan hosted by *Prof. Ayumi Igarashi*
May 2019 – July 2019:	Max Planck Institute for Software Systems, Saarbrucken, Germany hosted by *Prof. Krishna Gummadi*
May 2016 – July 2016:	Stanford University, USA hosted by *Prof. Ashish Goel*

Teaching at IIT Kharagpur

- Algorithm Design and Analysis: many times in IIT Kharagpur.
- Randomized Algorithm Design: many times in IIT Kharagpur.
- Selected Topics in Algorithms: many times in IIT Kharagpur.
- Parameterized Algorithms: many times in IIT Kharagpur (with Prof. Sudeshna Kolay).
- Algorithm I: many times in IIT Kharagpur (with Prof. Partha Pratim Chakrabarty).
- Algorithm II: many times in IIT Kharagpur (with Prof. Sudeshna Kolay).
- Algorithmic Game Theory: many times in IIT Kharagpur.
- Advanced Graph Theory: Winter of 2019 in IIT Kharagpur (with Prof. Bhargab B. Bhattacharyya).
- Programming and Data Structures: many times in IIT Kharagpur.
- Algorithms Laboratory: Many times in IIT Kharagpur.
- Programming and Data Structures Laboratory: Many times in IIT Kharagpur.

Teaching on NPTEL Platform

- Algorithmic Game Theory
- Selected Topics in Algorithms
- Approximation Algorithms
- Second Level Algorithms
- Artificial Intelligence for Economics (jointly with Prof. Adway Mitra and Prof. Dripto Bakshi)

Education and Related Experience

Apr 2018 – Present:
Department of Computer Science and Engineering
IIT Kharagpur
Assistant Professor

Jan. 2017 – March 2018:
School of Technology and Computer Science
Tata Institute of Fundamental Research, Mumbai
Post-doctoral Visiting Fellow

Aug. 2013 – Dec. 2016:
Doctor of Philosophy
Computer Science and Automation, **Indian Institute of Science, Bangalore**
Thesis title: *Resolving the Complexity of Some Fundamental Problems in Computational Social Choice*
(Supervised by **Prof. Y. Narahari** and **Prof. Arnab Bhattacharyya**)
(Submitted in August 2016; defended in March 2017)
Winner of ACM India best thesis in Computer Science in India in 2017
Winner of best thesis in Computer Science in IISc in 2016-17

August 2011 – July 2013:
Master of Engineering
Computer Science and Automation, **Indian Institute of Science, Bangalore**
Thesis title: *Asymptotic Coalitional Strategy Proofness in Voting*
(Supervised by **Prof. Y. Narahari**)
Winner of best Master of Engineering student in Computer Science in India in 2017

May 2010 – July 2011:
Adobe Systems India Pvt. Ltd.
Member of technical staff

July 2006 – April 2010:
Bachelor of Engineering
Computer Science and Engineering, **Jadavpur University**, Kolkata
(Supervised by **Prof. Avijit Kar**)

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