Souvik Saha

Curriculum Vitae

Theoretical Computer Science
The Institute of Mathematical Science, HBNI
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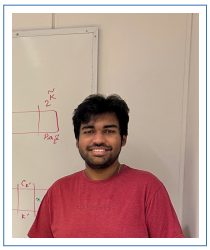

Research Interest

Parameterized Approximation Algorithms, Parameterized Complexity Theory, Graph Algorithms, Approximation Algorithms

Education

2019–present **Integrated PhD, Theroetical Computer Science**, *The Institute of Mathematical Sciences, HBNI*, Chennai, India.
Phd Thesis: "The Tractacability Landscape of Partitioning, Covering and Satisfiablity Problems"
MSc Thesis: "Fpt-Approximation for Partial Hitting Set Problems"
Supervisor: Prof Saket Saurabh

2016–2019 : **BSc(Hons) in Mathematics and Computing**, *Institute of Mathematics and Applications*, Bhubaneswar.

Grants and Awards

August,2025 ACM/IARCS Travel Grant

August,2025 IJCAI Travel Grant

Publications

Just Accepted

Line Cover and Related Problems - Matthias Benter, Fedor V. Fomin, Petr A. Golovach, Souvik Saha, Sanjay Seetharaman, Anannya Upasana, STACS 2026

Journal Articles

2025 Pallavi Jain, Lawqueen Kanesh, Fahad Panolan, Souvik Saha, Abhishek Sahu, Saket Saurabh, and Anannya Upasana. Parameterized approximation schemes for biclique-free max k-weight sat and max coverage. *ACM Trans. Algorithms*. Association for Computing Machinery, August 2025. Just Accepted.

2024 Satyabrata Jana, Souvik Saha, Abhishek Sahu, Saket Saurabh, and Shaily Verma. Partitioning subclasses of chordal graphs with few deletions. *Theor. Comput. Sci.*, volume 983, page 114288, 2024.

In Conference Proceedings

2025 Nidhi Purohit, Souvik Saha, Saket Saurabh, and Anannya Upasana. Nonpartisan feedback vertex set. In Irene Finocchi and Loukas Georgiadis, editors, *Algorithms and Complexity - 14th International Conference, CIAC 2025, Rome, Italy, June 10-12, 2025, Proceedings, Part II*, volume 15680 of *Lecture Notes in Computer Science*, pages 216–232. Springer, 2025.

2025 Satyabrata Jana, Souvik Saha, Saket Saurabh, and Anannya Upasana. Parameterized reunion with achromatic number. In Ho-Lin Chen, Wing-Kai Hon, and Meng-Tsung Tsai, editors, *36th International Symposium on Algorithms and Computation, ISAAC 2025, Tainan, Taiwan, December 7-10, 2025*, volume 359 of *LIPIcs*, pages 42:1–42:20. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2025.

2025 Sushmita Gupta, Pallavi Jain, Souvik Saha, Saket Saurabh, and Anannya Upasana. More efforts towards fixed-parameter approximability of multiwinner rules. In *Proceedings of the Thirty-Fourth International Joint Conference on Artificial Intelligence, IJCAI 2025, Montreal, Canada, August 16-22, 2025*, pages 3891–3899. ijcai.org, 2025.

2025 Shubhada Aute, Fahad Panolan, Souvik Saha, Saket Saurabh, and Anannya Upasana. Parameterized complexity of generalizations of edge dominating set. In Rastislav Královic and Vera Kurková, editors, *SOFSEM 2025: Theory and Practice of Computer Science - 50th International Conference on Current Trends in Theory and Practice of Computer Science, SOFSEM 2025, Bratislava, Slovak Republic, January 20-23, 2025, Proceedings, Part I*, volume 15538 of *Lecture Notes in Computer Science*, pages 65–79. Springer, 2025.

2024 Pallavi Jain, Lawqueen Kanesh, Fahad Panolan, Souvik Saha, Abhishek Sahu, Saket Saurabh, and Anannya Upasana. Max-sat with cardinality constraint parameterized by the number of clauses. In José A. Soto and Andreas Wiese, editors, *LATIN 2024: Theoretical Informatics - 16th Latin American Symposium, Puerto Varas, Chile, March 18-22, 2024, Proceedings, Part II*, volume 14579 of *Lecture Notes in Computer Science*, pages 223–237. Springer, 2024.

2023 Satyabrata Jana, Souvik Saha, Abhishek Sahu, Saket Saurabh, and Shaily Verma. Partitioning subclasses of chordal graphs with few deletions. In Marios Mavronicolas, editor, *Algorithms and Complexity - 13th International Conference, CIAC 2023, Larnaca, Cyprus, June 13-16, 2023, Proceedings*, volume 13898 of *Lecture Notes in Computer Science*, pages 293–307. Springer, 2023.

2023 Pallavi Jain, Lawqueen Kanesh, Fahad Panolan, Souvik Saha, Abhishek Sahu, Saket Saurabh, and Anannya Upasana. Parameterized approximation scheme for biclique-free max k-weight SAT and max coverage. In Nikhil Bansal and Viswanath Nagarajan, editors, *Proceedings of the 2023 ACM-SIAM Symposium on Discrete Algorithms, SODA 2023, Florence, Italy, January 22-25, 2023*, pages 3713–3733. SIAM, 2023.

Talks

Dec, 2025 **Modern Trends in Parameterized Algorithms**, *IIT Madras, Chennai*, Gave a talk on "Partial Coverage on Biclique Free Instances and Sat" .

2024 **LATIN**, *Presented our paper "Max-SAT with Cardinality Constraint Parameterized by the Number of Clauses"*.

June,2023 **CIAC**, *Cyprus*, Preseneted our paper "Partitioning Subclasses of Chordal Graphs with Few Deletions".

Dec,2024 **Advanced Parameterized Graph Algorithms**, *Bali, Indonesia*, Talk on "Generalizations of Point Line Cover".

August,2025 **IJCAI**, *Guangzhou,China*, Presented our paper " More Efforts Towards Fixed-Parameter Approximability of Multiwinner Rules".

Academic Visits

Jan,2026 Dr Sudeshna Kolay, IIT Kharagpur, Department of Computer Science

Aug-Oct,2024 Department of Informatics, University of Bergen

Aug-Sep,2022 Dr Fahad Panolan, IIT Hyderabad, Department of Computer Science

Academic Achievements & Recognitions

2019 Joint Entrance Screening Test (JEST), All India Rank 4^{th}

2014 Regional Mathematical Olympiad (5th Rank in West Bengal), organised by the National Board of Higher Mathematics and Homi Bhaba Centre for Science and Education

Academic Service

Subreviewer for SODA 2026

Position of Responsibility

2024 **Local Coordinator for ACM School:"An Invitation to Algorithmic Game Theory"**, *organized by*, IMSc Chennai, ACM, Google.

2025 **Volunteer for IJCAI 2025**, Guangzhou, China.

Teaching Assistantship

Jan-April, 2022 : **Parameterized Complexity**, IMSc, Chennai.

Jan-April 2023 : **Approximation Algorithm**, IMSc, Chennai.

Referees

Prof. Saket Saurabh
Professor, IMSc Chennai and Department of Informatics
University of Bergen
✉ saket.at.imsc.res.in

Dr. Abhishek Sahu
Assistant Professor, Department of Computer Sciences
National Institute of Science Education and Research (NISER)
✉ abhisheksahu@niser.ac.in