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Full Work Experience:

1. Professor (HAG), Advanced Computing and Microelectronics Unit, Indian Statistical Institute, Kolkata, from Sept.2025 to till date.
2. Professor, Advanced Computing and Microelectronics Unit, Indian Statistical Institute, Kolkata, from 1st March, 2012 to Sept.2025.
3. Associate Professor, Advanced Computing and Microelectronics Unit, Indian Statistical Institute, Kolkata, from 2006 to 1st March, 2012.
4. Assistant Professor, Advanced Computing and Microelectronics Unit, Indian Statistical Institute, Kolkata, from 2004 to 2006.
5. Programmer, Advanced Computing and Microelectronics Unit, Indian Statistical Institute, Kolkata, from 1999 to 2004.
6. Lecturer, Department of Computer Science and Application, *North Bengal University*, West Bengal, India, from 1990 to 1999.

Academic Qualification :

- Ph. D. from Indian Statistical Institute, Kolkata under supervision of Prof. Bhargab B. Bhattacharya in 2001
  Title : Routing Algorithms in Channels, Switchboxes and MCM's in VLSI Layout Design
- M. Tech. Computer Science with Hons. in 1990 from Indian Statistical Institute, Kolkata, India
- Master of Statistics in 1988 from Indian Statistical Institute, Kolkata, India
- Bachelor of Statistics with Hons. in 1986 from Indian Statistical Institute, Kolkata, India

Complete List of Research Publications:

Articles in Journals :

1. Bhaswar B. Bhattacharya, Sandip Das, Sk Samim Islam, Saumya Sen (2026): *Growth rates of the number of empty triangles and simplices*, Computational Geometry: Theory and Applications, vol. 130, 102197.
2. Sergio Cabello, Arun Kumar Das, Sandip Das, Joydeep Mukherjee (2025): *Finding a largest-area triangle in a terrain in near-linear time*, Computational Geometry: Theory and Applications, vol. 128, 102171.
3. Sandip Das, Koushik Kumar Dey, Pavan P. D, Sagnik Sen (2025): *Counting the minimum number of arcs in an oriented graph having weak diameter 2*, Discrete Applied Mathematics, vol. 364, 222-236.
4. Sheikh Shakil Akhtar, Sandip Das, Harmender Gahlawat (2024): *Cops and Robber on butterflies, grids, and AT-free graphs*, Discrete Applied Mathematics, vol. 345, 231-245.
5. Sandip Das, Subhadeep Ranjan Dev, Swami Sarvattomananda (2024): *A worst-case optimal algorithm to compute the Minkowski sum of convex polytopes*, Discrete Applied Mathematics, vol. 350, 44-61.
6. Sandip Das, Abhiruk Lahiri, Soumen Nandi, Sagnik Sen, S. Taruni (2024): *On (n,m)-chromatic numbers of graphs with bounded sparsity parameters*, Discrete Applied Mathematics, vol. 358, 417-428.
7. Julien Bensmail, Sandip Das, Soumen Nandi, Ayan Nandy, Tho Pierron, Swathy Prabhu, Sagnik Sen (2024): *Oriented total-coloring of oriented graphs*, Discrete Mathematics, vol. 347(12), 114174.

8. Sandip Das, Sumitava Ghosh, Swathy Prabhu, Sagnik Sen (2023): *A Homomorphic Polynomial for Oriented Graphs*, Electronics Journal of Combinatorics, vol. 30(1).

9. Arun Kumar Das, Sandip Das, Guilherme Dias da Fonseca, Yan Gerard, Bastien Rivier (2023): *Complexity results on untangling red-blue matchings*, Computational Geometry: Theory and Applications, vol. 111, 101974.

10. Dipayan Chakraborty, Sandip Das, Soumen Nandi, Debdeep Roy, Sagnik Sen (2023): *On clique numbers of colored mixed graphs*, Discrete Applied Mathematics, vol. 324, pp. 29-40.

11. Dibyayan Chakraborty, Sandip Das, Srijit Mukherjee, Uma Kant Sahoo, Sagnik Sen (2023): *Triangle-free projective-planar graphs with diameter two: Domination and characterization*, Discrete Applied Mathematics, vol. 331, pp. 11-24.

12. Arun Kumar Das, Sandip Das, Joydeep Mukherjee (2023): *Approximation algorithms for orthogonal line centers*, Discrete Applied Mathematics, vol. 338, pp. 69-76.

13. Sandip Das, Soham Das, Swathy Prabhu, Sagnik Sen (2022): *On fractional version of oriented coloring*, Discrete Applied Mathematics, vol. 316, pp. 33-42.

14. Dibyayan Chakraborty, Sandip Das, Joydeep Mukherjee (2022): *On dominating set of some subclasses of string graphs*, Computational Geometry: Theory and Applications, vol. 107, 101884.

15. Sandip Das, Harmender Gahlawat (2022): *Bumblebee visitation problem*, Discrete Applied Mathematics, vol. 319: 27-41.

16. Julien Bensmail, Sandip Das, Soumen Nandi, Théo Pierron, Sagnik Sen, Éric Sopena (2022): *On the signed chromatic number of some classes of graphs*, Discrete Mathematics, vol. 345(2): 112664.

17. Binay Bhattacharya, Sandip Das, Subhadeep Ranjan Dev (2022): *The weighted k-center problem in trees for fixed k*, Theoretical Computer Science, vol. 906: 64-75.

18. Sandip Das, Prantar Ghosh, Shamik Ghosh, Sagnik Sen (2021): *Oriented bipartite graphs and the Goldbach graph*, Discrete Mathematics, vol. 344(9), 112497.

19. Aritra Banik, Arun Kumar Das, Sandip Das, Anil Maheshwari, Swami Sarvottamananda (2021): *Voronoi game on polygons*, Theoretical Computer Science, vol. 882, 125-142.

20. Sandip Das, Harmender Gahlawat (2021): *Variations of cops and robbers game on grids*, Discrete Applied Mathematics, vol. 305, 340-349.

21. Sandip Das, Ayan Nandy, Swami Sarvottamananda (2021): *Radius, diameter, incenter, circumcenter, width and minimum enclosing cylinder for some polyhedral distance functions*, Discrete Applied Mathematics, vol. 280, 71-85.

22. Binay Bhattacharya, Arijit Bishnu, Otfried Cheong, Sandip Das, Arindam Karmakar, Jack Snoeyink (2021): *Computation of spatial skyline points*, Computational Geometry: Theory and Applications, vol. 93, 101698.

23. Dibyayan Chakraborty, Sandip Das, Mathew C. Francis, Sagnik Sen (2021): *On rectangle intersection graphs with stab number at most two*, Discrete Applied Mathematics, vol. 289, pp. 354-365.

24. Julien Bensmail, Sandip Das, Soumen Nandi, Soumyajit Paul, Théo Pierron, Sagnik Sen, Éric Sopena (2021): *Pushable chromatic number of graphs with degree constraints*, Discrete Mathematics, vol. 344(1), pp. 112151.

25. Arun Kumar Das, Sandip Das, Joydeep Mukherjee (2021): *Largest triangle inside a terrain*, Theoretical Computer Science, vol. 858, pp. 90-99.

26. Sandip Das, Harmender Gahlawat, Uma Kant Sahoo, Sagnik Sen (2021): *Cops and robber game on some families of oriented graphs*, Theoretical Computer Science, vol. 888, pp. 31-40.

27. Sandip Das, Ayan Nandy, Sarvottamananda (2020): *Optimizing movement in convex and non-convex path-networks to establish connectivity*, Discrete Applied Mathematics, vol. 286, pp. 62-77.

28. Binay Bhattacharya, Sandip Das, Tsunehiko Kameda (2020): *Linear-Time Fitting of a k-Step Function*, Discrete Applied Mathematics, vol. 280, pp. 43-52.

29. Sandip Das, Ayan Nandy, Sarvottamananda (2020): *Linear time algorithms for Euclidean 1-center in $\Re^d$ with non-linear convex constraints*, Discrete Applied Mathematics, vol. 280, pp. 71-85.

30. Sandip Das, Prantar Ghosh, Swathy Prabhu, Sagnik Sen (2020): *Relative clique number of planar signed graphs*, Discrete Applied Mathematics, vol. 280, pp. 86-92.

31. Dibyayan Chakraborty, Sandip Das, Joydeep Mukherjee, Uma Kant Sahoo (2019): *Bounds on the bend number of split and cocomparability graphs*, Theory of Computing Systems, vol. 63(6), pp. 1336-1357.

32. Aritra Banik, Sandip Das, Anil Maheshwari, Michiel Smid (2019): *The discrete Voronoi game in a simple polygon*, Theoretical Computer Science, vol. 793, pp. 28-35.

33. Aritra Banik, Bhaswar B. Bhattacharya, Sandip Das, Sreeja Das (2019): *The 1-dimensional discrete Voronoi game*, Operations Research Letters, vol. 47(2), pp. 115-121.

34. Sandip Das, Swathy Prabhu, Sagnik Sen (2018): *A study on oriented relative clique number*, Discrete Mathematics, vol. 341(7), pp. 2049-2057.

35. Sergey Bereg, Binay Bhattacharya, Sandip Das, Tsunehiko Kameda, Priya Ranjan Sinha Mahapatra, Zhao Song (2018): *Optimizing squares covering a set of points*, Theoretical Computer Science, vol. 729, pp. 68-83.

36. Aritra Banik, Bhaswar B. Bhattacharya, Sandip Das, Satyaki Mukherjee (2017): *The discrete Voronoi game in $\Re^2$*, Computational Geometry: Theory and Applications, vol. 63, pp. 53-62.

37. Sandip Das, Sasthi C. Ghosh, Soumen Nandi (2017): *Optimal L(3, 2, 1)-labeling of triangular lattice*, Discrete Applied Mathematics, vol. 228, pp. 32-40.

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39. S. Banerjee, B. B. Bhattacharya, B. Bhattacharya, A. Biswas, S. Das, R. Mandal, S. Roy (2017): *On representing a simple polygon perceivable to a blind person*, Information Processing Letters, vol. 120, pp. 1-5.

40. Deepan Basu, Kinjal Basu, Bhaswar B. Bhattacharya, Sandip Das (2016): *Almost empty monochromatic triangles in planar point sets*, Discrete Applied Mathematics, vol. 210, pp. 207-213.

41. Ashok Kumar Das, Sandip Das, Malay K. Sen (2016): *Forbidden substructure for interval digraphs/bigraphs*, Discrete Mathematics, vol. 339(2), pp. 1028-1051.

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45. Sandip Das, Mathew C. Francis, Pavol Hell, Jing Huang (2013): *Recognition and Characterization of Chronological Interval Digraphs*, Electronic Journal of Combinatorics, vol. 20(3), P5.

46. Bhaswar B. Bhattacharya, Sandip Das (2013): *On pseudo-convex partitions of a planar point set*, Discrete Mathematics, vol. 313(21), pp. 2401-2408.

47. S. Banerjee, B. B. Bhattacharya, S. Das, A. Karmakar, A. Maheshwari, S. Roy (2013): *On the Construction of Generalized Voronoi Inverse of a Rectangular Tessellation*, Transactions on Computational Science, vol. 20, pp. 22-38.

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49. A. Basu, S. Das, S. Ghosh, M. Sen(2013): *Circular-arc bigraphs and its subclasses*, Journal of Graph Theory, vol. 73(4), pp. 361-376.

50. J. Mukherjee, P. R. Sinha Mahapatra, A. Karmakar, S. Das (2013): *Minimum Width Rectangular Annulus*, Theoretical Computer Science, vol. 508, pp. 74-80.

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52. A. Banik, B. B. Bhattacharya, S. Das (2013): *Optimal Strategies for the One-Round Discrete Voronoi Game on a Line*, Journal of Combinatorial Optimization, vol. 26(4), pp. 655-669.

53. B. B. Bhattacharya, and S. Das (2013): *Disjoint empty convex pentagons in planar point sets*, Periodica Mathematica Hungarica, vol. 66(1), pp.73-86.

54. B. B. Bhattacharya, and S. Das (2012): *Holes or Empty Pseudo-Triangles in Planar Point Sets*, Moscow Journal of Combinatorics and Number Theory, Vol. 2(1), pp. 16-46.

55. B. B. Bhattacharya, and S. Das (2011): *On the minimum size of a point set containing a 4-Hole and a disjoint 5-Hole*, Studia Scientarium Mathematica Hungarica, Vol. 48, No. 4, pp. 445-457.

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62. G. K. Das, S. Das and S. C. Nandy (2009): *Homogeneous 2-hop broadcast in 2D*, Computational Geometry, vol. 43(2), pp. 182-190.

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66. R. Benkoczi, B. K. Bhattacharya, S. Das and J. Sember (2009), *Single facility collection depots location problem in the plane*, Computational Geometry: Theory and Applications, vol. 42(5), pp. 403-418.

67. S. Roy, S. Bhattacharjee, S. Das and S. C. Nandy (2009): *A new fast heuristic for labeling points*, Information Processing Letters, vol. 109(10), pp. 478-484.

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72. P. P. Goswami, S. Das and S. C. Nandy (2007): *Chromatic distribution of k-nearest neighbors of a line segment in a planar colored point set*, Information Processing Letters, vol. 102(4), pp. 163-168.

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74. A. Bishnu, S. Das, S. C. Nandy and B. B. Bhattacharya (2006): *Simple algorithms for partial point set pattern matching under rigid motion*, Pattern Recognition, vol. 39, pp. 1662-1671.

75. M. Sen, P. Talukdar, and S. Das (2006): *Chronological orderings of interval digraph*, Discrete Mathematics, vol. 306, No. 11, pp. 1601-1609.

76. G. K. Das, S. Das and S. C. Nandy(2006): *Range assignment for energy efficient broadcasting in linear radio networks*, Theoretical Computer Science, vol. 352, pp. 332-341.

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Articles in Electronic Notes :

84. Soumen Nandi, Sagnik Sen, Sasthi C. Ghosh, Sandip Das (2015): *On* $L(k, k-1, \ldots, 1)$ *labeling of triangular lattice*, Electronic Notes in Discrete Mathematics, vol. 48, pp. 281-288.

85. Sandip Das, Swathyprabhu Mj, Sagnik Sen (2015): *On oriented relative clique number*, Electronic Notes in Discrete Mathematics, vol. 50, pp. 95-101.

86. Deepan Basu, Bhaswar B. Bhattacharya, Sandip Das (2013): *Almost Empty Monochromatic Triangles in Planar Point Sets*, Electronic Notes in Discrete Mathematics, vol. 44, pp. 53-59.

87. S. Das, P. Talukdar, and M. Sen (2003): *Homogeneously representable interval bigraphs*, Proceedings of R.C. Bose Centenary Symposium on Discrete Mathematics and Applications in Electronic Notes in Discrete Mathematics Vol. 15, pp 77-80.

88. M. Sen, P. Talukdar, and S. Das (2003): *Chronological orderings of interval digraph*, Proceedings of R.C. Bose Centenary Symposium on Discrete Mathematics and Applications in Electronic Notes in Discrete Mathematics Vol. 15, pp 184-187.

Articles in Conference Proceedings

1. Bhaswar B. Bhattacharya, Sandip Das, Sk Samim Islam, Saumya Sen (2025): *Almost Empty Monochromatic Polygons in Planar Point Sets*, CALDAM 2025, LNCS 15536, Springer, pp. 50-59.

2. Arun Kumar Das, Sandip Das, Sk Samim Islam, Ritam M. Mitra, Bodhayan Roy (2025): *Multipacking in the Euclidean Metric Space*, CALDAM 2025, LNCS 15536, Springer, pp. 109-120.

3. Sandip Das, Sk Samim Islam (2025): *Multipacking and Broadcast Domination on Cactus Graphs and Its Impact on Hyperbolic Graphs*, WALCOM 2025, LNCS 15411, Springer, pp. 111-126.

4. Bhaswar B. Bhattacharya, Sandip Das, Sk Samim Islam, Saumya Sen (2024): *Growth Rate of the Number of Empty Triangles in the Plane*, CALDAM 2024, LNCS 14508, Springer, pp. 77-87

5. Arun Kumar Das, Sandip Das, Anil Maheshwari, Swami Sarvattomananda (2023):*Rectilinear Voronoi Games with a Simple Rectilinear Obstacle in Plane*, CALDAM 2023, LNCS 13947, Springer, pp. 89-100.

6. Sandip Das, Florent Foucaud, Sk Samim Islam, Joydeep Mukherjee (2023):*Relation Between Broadcast Domination and Multipacking Numbers on Chordal Graphs*, CALDAM 2023, LNCS 13947, Springer, pp. 297-308.

7. Sandip Das, Harmender Gahlawat, Ashwin Ramgopal, Uma Kant Sahoo, Sagnik Sen (2023):*Cops and Robber on Oriented Graphs with Respect to Push Operation*, CALDAM 2023, LNCS 13947, Springer, pp. 309-320.

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9. Dibyayan Chakraborty, Antoine Dailly, Sandip Das, Florent Foucaud, Harmender Gahlawat, Subir Kumar Ghosh (2022):*Complexity and Algorithms for ISOMETRIC PATH COVER on Chordal Graphs and Beyond*, ISAAC 2022, LIPIcs 248, Schloss Dagstuhl - Leibniz-Zentrum fr Informatik, pp. 12:1-12:17.

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12. Sergio Cabello, Arun Kumar Das, Sandip Das, Joydeep Mukherjee (2021):*Finding a Largest-Area Triangle in a Terrain in Near-Linear Time*, Algorithms and Data Structures - 17th International Symposium, WADS 2021, Proceedings, LNCS, Springer, (in press)

13. Arun Kumar Das, Sandip Das, Joydeep Mukherjee (2021): *Approximation Algorithms for Orthogonal Line Centers*, Algorithms and Discrete Applied Mathematics - fifth International Conference, CALDAM 2021, Proceedings, LNCS 12601, Springer, pp. 43-54.

14. Sandip Das, Subhadeep Ranjan Dev, Swami Sarvottamananda (2021): *A Worst-Case Optimal Algorithm to Compute the Minkowski Sum of Convex Polytopes*, Algorithms and Discrete Applied Mathematics - seventh International Conference, CALDAM 2021, Proceedings, LNCS 12601, Springer, pp. 179-195

15. Sandip Das, Siddani Bhaskara Rao, Uma Kant Sahoo (2021): *On Degree Sequences and Eccentricities in Pseudoline Arrangement Graphs*, Algorithms and Discrete Applied Mathematics - seventh International Conference, CALDAM 2021, Proceedings, LNCS 12601, Springer, pp. 259-271

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17. Barunabha Chakraborty, Arun Kumar Das, Sandip Das, Joydeep Mukherjee (2020): *Approximating k-Orthogonal Line Center*, Combinatorial Optimization and Applications - 14th International Conference, COCOA 2020, Proceedings, LNCS 12577, Springer, pp. 47-60

18. Aritra Banik, Arun Kumar Das, Sandip Das, Anil Maheshwari, Swami Sarvottamananda (2020): *Optimal Strategies in Single Round Voronoi Game on Convex Polygons with Constraints*, Combinatorial Optimization and Applications - 14th International Conference, COCOA 2020, Proceedings, LNCS 12577, Springer, pp. 515-529

19. Dibyayan Chakraborty, Sandip Das, Florent Foucaud, Harmender Gahlawat, Dimitri Lajou, Bodhayan Roy (2020): *Algorithms and Complexity for Geodetic Sets on Planar and Chordal Graphs*, 31st International Symposium on Algorithms and Computation, ISAAC 2020, Proceedings, LIPIcs 181, Schloss Dagstuhl - Leibniz-Zentrum fr Informatik 2020, pp. 7:1-7:15

20. Binay Bhattacharya, Sandip Das, Subhadeep Ranjan Dev (2019): *The Weighted k-Center Problem in Trees for Fixed k*, 30th International Symposium on Algorithms and Computation, ISAAC 2019, Proceedings, LIPIcs 149, Schloss Dagstuhl - Leibniz-Zentrum fr Informatik 2019, pp. 27:1-27:11

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25. Sandip Das, Harmender Gahlawat (2019): *Bumblebee Visitation Problem*, Algorithms and Discrete Applied Mathematics - fifth International Conference, CALDAM 2019, Proceedings, LNCS 11394, Springer, pp. 254-262.

26. Dibyayan Chakraborty, Sandip Das, Joydeep Mukherjee (2019): *Dominating Set on Overlap Graphs of Rectangles Intersecting a Line*, Computing and Combinatorics - 25th International Conference, COCOON 2019, LNCS 11653, Springer, pp. 65-77.

27. Sandip Das, Harmender Gahlawat, Uma Kant Sahoo, Sagnik Sen (2019): *Cops and Robber on Some Families of Oriented Graphs*, Combinatorial Algorithms - 30th International Workshop, IWOCA 2019, LNCS 11638, Springer, pp. 188-200.

28. Sandip Das, Subhadeep Ranjan Dev, Arpan Sadhukhan, Uma Kant Sahoo, Sagnik Sen (2018): *Burning Spiders*, Algorithms and Discrete Applied Mathematics - Second International Conference, CALDAM 2018, Proceedings, LNCS 10743, Springer, pp. 155-163

29. Sandip Das, Harmender Gahlawat (2018): *Variations of Cops and Robbers Game on Grids*, Algorithms and Discrete Applied Mathematics - Second International Conference, CALDAM 2018, Proceedings, LNCS 10743, Springer, pp. 249-259

30. Sandip Das, Soumen Nandi, Sagnik Sen (2018): *On Oriented $L(p,1)$-labeling.*, Algorithms and Discrete Applied Mathematics - Second International Conference, CALDAM 2018, Proceedings, LNCS 10743, Springer, pp. 274-282.

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32. Sandip Das, Soumen Nandi, Sagnik Sen (2017): *On Chromatic Number of Colored Mixed Graphs*, Algorithms and Discrete Applied Mathematics - Second International Conference, CALDAM 2017, Proceedings, LNCS 10156, Springer, pp. 130-140.

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35. Sandip Das, Ayan Nandy, Swami Sarvottamananda (2016): *Linear Time Algorithms for Euclidean 1-Center in $\Re^d$ with Non-linear Convex Constraints*, Algorithms and Discrete Applied Mathematics - Second International Conference, CALDAM 2016, Proceedings, LNCS 9602, Springer, pp. 126-138.

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37. Sujoy Kumar Bhore, Dibyayan Chakraborty, Sandip Das, Sagnik Sen (2016): *On Local Structures of Cubicity 2 Graphs*, Combinatorial Optimization and Applications - 10th International Conference Proceedings,COCOA, LNCS 10043, Springer, pp. 254-269.

38. Sandip Das, Ayan Nandy, Swami Sarvottamananda (2016): *Linear Time Algorithm for 1-Center in R^d Under Convex Polyhedral Distance Function*, Frontiers in Algorithmics, 10th International Workshop, FAW 2016, LNCS 9711, Springer, pp. 41-52.

38. Aritra Banik, Binay K. Bhattacharya, Sandip Das, Tsunehiko Kameda, Zhao Song (2016): *The p-Center Problem in Tree Networks Revisited*, Proc. Scandinavian Workshop on Algorithmic Theory (SWAT - 2016), June 22-24, 2016, Reykjavik, Iceland, LIPIcs, vol. 53, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik 6:1-6:15.

39. Binay Bhattacharya, Ante Custic, Sandip Das, Yuya Higashikawa, Tsunehiko Kameda, Naoki Katoh (2015): *Geometric p-Center Problems with Centers Constrained to Two Lines*, Discrete and Computational Geometry and Graphs - 18th Japan Conference, JCDCGG 2015, Kyoto, Japan, September 14-16, 2015, Revised Selected Papers, pp. 24-36

40. Sujoy Kumar Bhore, Dibyayan Chakraborty, Sandip Das, Sagnik Sen (2015): *On a Special Class of Boxicity 2 Graphs*, Conference of Algorithms and Discrete Applied Mathematics CALDAM 2015, Kanpur, India, LNCS 8959, Springer, pp. 157-168.

41. Sandip Das, Anil Maheshwari, Ayan Nandy, Michiel H. M. Smid (2014): *A Facility Coloring Problem in 1-D*, Algorithmic Aspects in Information and Management AAIM 2014, LNCS 8546, Springer, pp. 88-99.

42. Binay K. Bhattacharya, Sandip Das, Tsun8ehiko Kameda, Priya Ranjan Sinha Mahapatra, Zhao Song (20144): *Optimizing Squares Covering a Set of Points*, Combinatorial Optimization and Applications COCOA 2014, LNCS 8881, Springer, pp. 37-52.

43. Aritra Banik, Bhaswar B. Bhattacharya, Sandip Das, Sreeja Das (2013): *Two-Round Discrete Voronoi Game along a Line*, Frontiers in Algorithmics and Algorithmic Aspects in Information and Management FAW-AAIM 2013), Dalian, China, LNCS 7924, Springer, pp.210-220.

44. Aritra Banik, Bhaswar B. Bhattacharya, Sandip Das, Satyaki Mukherjee (2013): *One-Round Discrete Voronoi Game in R^2 in Presence of Existing Facilities*, Proc. of the 25th Annual Canadian Conference on Computational Geometry, Waterloo, Ontario, Canada.

45. Aritra Banik, Sandip Das, Anil Maheshwari, Michiel H. M. Smid (2013): *The Discrete Voronoi Game in a Simple Polygon*, 19th Annual International Conference on Computing and Combinatorics (COCOON 2013), Hangzhou, China, LNCS 7936, Springer, pp.197-207.

46. Barun Gorain, Partha Sarathi Mandal, Sandip Das (2013): *Approximation Algorithm for Minimizing the Size of Coverage Hole in Wireless Sensor Networks*, Distributed Computing and Networking, 14th International Conference (ICDCN 2013), Mumbai, India, LNCS 7730, Springer, pp. 463-46131

47. Sayan Bandyapadhyay, Aritra Banik, Sandip Das, Hirak Sarkar (2013): *Voronoi Game on Graphs*, Workshop on Algorithms and Computation (WALCOM 2013), Kharagpur, India, LNCS 7748, Springer, pp. 77-88.

48. Sandip Banerjee, Bhargab B. Bhattacharya, Sandip Das, Arindam Karmakar, Anil Maheshwari, Sasanka Roy (2012): *On the Construction of a Generalized Voronoi*

Inverse of a Rectangular Tessellation, 9th International Symposium on Voronoi Diagrams in Science and Engineering, (ISVD 2012), New Brunswick, NJ, USA, IEEE press, pp.132-137.

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51. P. R. Sinha Mahapatra, A. Karmakar, S. Das, P. P. Goswami (2011): *k-Enclosing Axis-Parallel Square*, The 2006 Int. Conf. on Computational Science and its Applications, LNCS 6784 Part III, Springer, pp. 84-93.

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53. A. Karmakar, S. Das, S. C. Nandy, B. K. Bhattacharya (2010): *Some Variations on Constrained Minimum Enclosing Circle Problem*, 4th International Conference on Combinatorial Optimization and Applications - COCOA (1) 2010, Kailua-Kona, HI, USA, LNCS 6508, Springer, pp. 354-368.

54. A. Bishnu, S. Das, S. C. Nandy, B. B. Bhattacharya (2010): *A Simpl35Algorithm for Approximate Partial Point Set Pattern Matching under Rigid Motion*, Workshop on Algorithms and Computation, haka, Bangladesh, LNCS 5942, pp. 102-112

55. B. K. Bhattacharya, A. Bishnu, O. Cheong, S. Das, A. Karmakar, J. Snoeyink (2010): *Computation of Non-dominated Points Using Compact Voronoi Diagrams*. Workshop on Algorithms and Computation, Dhaka, Bangladesh, LNCS 5942, pp. 82-9336

56. P. R. Sinha Mahapatra, P. P. Goswami and S. Das (2008): *Maximal Covering by Two Isothetic Unit Squares*, Proc. of the 20th Annual Canadian Conference on Computational Geometry, at McGill Universit37in Montreal, Canada, pp. 103-106.

57. A. Karmakar, S. Roy, S. Das (2008): *Guarding Exterior Region of a Simple Polygon*,Workshop on Algorithms and Computation, Dhaka, Bangladesh, LNCS 4921, pp. 100-1108

58. P. R. Sinha Mahapatra, P. P. Goswami and S. Das (2007): *Covering points by isothetic unit squares*, Proc. of the 19th Annual Canadian Conference on Computational Geometry, Ottawa, Canada, pp. 169-172.

59. S. Roy, S. Lodha, S. Das and A. Maheshwari (2007): *Approximate shortest descent path on a terrain*, Proc. of9the 19th Annual Canadian Conference on Computational Geometry, Ottawa, Canada, pp. 189-192.

60. A. Karmakar, S. Roy and S. Das (2007): *Fast computation of smallest enclosing circle with center on a query line segment*, Proc. of the 19th Annual Canadian Conference on Computational Geometry, Ottawa, Canada, pp. 273-276.

61. B. Ben-Moshe, B. K. Bhattacharya, S. Das, D. R. Gaur and Q. Shi (2007): *Computing a planar widest empty alpha-siphon in $o(n^3)$ time*, Proc. of the 19th Annual Canadian Conference on Computational Geometry, Ottawa, Canada, pp. 33-36.

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63. G. K. Das, S. Roy, S. Das and S. C. Nandy (2007): *Base station placement problem on the boundary of a convex region*, Workshop on Algorithms and Computation, Dhaka, Bangladesh, pp. 151-152.

64. S. Roy, A. Karmakar, S. Das and S. C. Nandy (2006): *Constrained minimum enclosing circle with center on a query line segment*, accepted in 31st International Symposium on Mathematical Foundations of Computer Science, LNCS 4162 pp. 765-776.

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71. S. Roy, D. Bardhan and S. Das (2005): *Efficient Algorithm for placing base stations by avoiding forbidden zone*, Distributed Computing and Internet Technology, LNCS 3816, pp. 105-116.

72. S. Das, P. P. Goswami and S. C. Nandy (2005): *Recognition of minimum width color-spanning corridor and minimum area color-spanning rectangle*, Computational Geometry and Applications (in conjunction with The 2005 Int. Conf. on Computational Science and its Applications), Singapore, LNCS 3483, pp. 827-837.

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74. G. Das, S. Das, and S. C. Nandy (2004): *Efficient algorithms for energy efficient broadcasting in linear radio network*, Proc. International Conference on High Performance Computing (HiPC 2004), Bangalore, India, LNCS 3296, pp. 420-429.

75. S. Roy, S. Das, and S. C. Nandy (2004) *A practical algorithm for approximating shortest weighted path between a pair of points on polyhedral surface*, in Proc. Computational Geometry and Applications (in conjunction with The 2004 Int. Conf. on Computational Science and its Applications), Italy, LNCS 3045, pp. 42-52.

76. P. P. Goswami, S. Das, and S. C. Nandy (2004): *Smallest k point enclosing rectangle of arbitrary orientation*, Proc. of the 16th Canadian Conference on Computational Geometry, Montreal, Canada, pp. 116-119.

77. A. Bishnu, S. Das, S. C. Nandy, and B. B. Bhattacharya (2003): *An Improved Algorithm for Point Set Pattern Matching under Rigid Motion*, 5th. Italian Conference on Algorithms and Complexity, Italy, LNCS-2653, pp. 36-45.

78. S. Roy, P. P. Goswami, S. Das, and S. C. Nandy (2002): *Optimal Algorithm for a Special Point-labeling Problem*, Proc. Scandinavian Workshop on Algorithmic Theory (SWAT - 2002), Finland, LNCS - 2368, pp. 110-120, 2002.

79. P. P. Goswami, S. Das, and S. C. Nandy (2002): *Simplex range searching and k nearest neighbors of a line segment in 2D*, Proc. Scandinavian Workshop on Algorithmic Theory (SWAT - 2002), Finland, LNCS - 2368, pp. 69-79, 2002.

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Teaching Experience:

Discrete Mathematics, Data and File Structures, Design and Analysis of Algorithms, Optimization Techniques, Computational Geometry, Graph theory and Combinatorics, Automata, Languages and Computation.

Research Interest: Graph Theory, Combinatorics, Graph Algorithms, Discrete Geometry, Computational Geometry, Data Structure.

Supervision of Ph.D. Thesis:

1. Dr. Sasanka Roy was awarded Ph.D. degree in 2007 from ISI. Title of his thesis is "Algorithms for Some Geometric Facility Location and Path Planning Problems".

2. Dr. Arindam Karmakar was awarded Ph.D. degree in 2011 from ISI. Title of his thesis is "Location Problems for Covering Demands: Algorithms and Applications".

3 *Priya Ranjan Sinha Mahapatra* was awarded Ph.D. degree in 2012 from *Kalyani University*. Title of his thesis is "Studies on Variations of Enclosing Problem using Rectangular Objects". Co-Superviser Partha P. Goswami.

4 *Aritra Banik* was awarded Ph.D. degree in 2014 from *Indian Statistical Institute*. Title of his thesis is "Voronoi Game and its Variants".

5. *Ayan Nandy* was awarded Ph.D. degree in 2018 from *Indian Statistical Institute*. Title of his thesis is "On Some Variants of the Center Location Problem".

6. *Soumen Nandi* was awarded Ph.D. degree in 2018 from *Indian Statistical Institute*. Title of his thesis is "Channel Assignment Problems and Some Graph Homomorphism Techniques".

7 *Swathy Prabhu* was awarded Ph.D. degree in 2019 from *Indian Statistical Institute*. Title of his thesis is "Variants of Coloring for Oriented Graphs".

8. *Dibyayan Chakraborty* was awarded Ph.D. degree in 2020 from *Indian Statistical Institute*. Title of his thesis is "Recognition and domination on intersection and overlap graphs of rectangles".

9. Harmender Gahlawat was awarded Ph.D. degree in 2022 from Indian Statistical Institute. Title of his thesis is "The Cops and Robber game on some graph classes".

10. Uma Kant Sahoo was awarded Ph.D. degree in 2022 from Indian Statistical Institute. Title of his thesis is "Arrangement Graphs and Intersection Graphs of Curves".

11. Subhadeep Ranjan Dev was awarded Ph.D degree in 2023 from Indian Statistical Institute. Title of his thesis is "Center Location and Related Problems on Graphs and Polyhedral Space".

12. Arun Kumar Das was awarded Ph.D degree in 2023 from Indian Statistical Institute. Title of his thesis is "Some Geometric Problems on Location Detection".

13. Samim Islam was awarded Ph.D degree in 2026 from Indian Statistical Institute. Title of his thesis is "Multipacking on graphs and Euclidean metric space".

List of patents:

1. T. Acharya, B. B. Bhattacharya, P. Bhowmick, A. Bishnu, A. Biswas, S. Das, M. K. Kundu, C. A. Murthy, and S. C. Nandy, "Fingerprint minutiae matching using geometric techniques", United States Patent 7,359,532, April 15, 2008.

Details of keynote/plenary/special lectures delivered since 2012:

Outside India

1. Invited speaker in Indo-German Workshop on Algorithms, 9 to 13 March 2015. Topic: Geometric center problems.

2. Invited Speaker in Indo-Russian workshop on Number Theory, Algebra, Discrete Mathematics and Cryptography was organized by the Moscow State University, at its campus, during 15 - 17 October 2014 Topic: The Erdos-Sekeres Theorem; upper bounds and related results

3. Invited speaker at the India-Taiwan Conference on Discrete Mathematics at Chiao Tung University, Hsinchu, Taiwan, November 18-22, 2013.

Within India

4. Expository Lectures on Graph and Geometric Algorithms, Birla Institue of Technology and Science Pilani, Hyderabad, September 21-22, 2018.

5. Special lectures in Research Promotion Workshop on "Introduction to Graph and Geometric Algorithms", University of Kashmir, Srinagar, May 18-20, 2015.

6. TEQIP sponsored short term training program for faculty members on "Design and Analysis of Algorithms" during the period May 18-22, 2015 and May 23-27, 2016 in Computer Engineering Department, at SV National Institute of Technology, Surat.

7. Special lectures in Research Promotion Workshop on "Introduction to Graph and Geometric Algorithms", Visvesvaraya National Institute of Technology, Nagpur, January 15-17, 2015.

8. Special lectures in Research Promotion Workshop on "Introduction to Graph and Geometric Algorithms", University of Kerala and IIITM-Kerala, Thiruvananthapuram, January 23-25, 2014. Topic: Approximation Algorithms.

9. Special lectures in Research Promotion Workshop on "Introduction to Graph and Geometric Algorithms", NIT Warangal, October 23-25, 2013. Topic: Introduction to Approximation Algorithms.

10. Special lectures in Research Promotion Workshop on "Introduction to Graph and Geometric Algorithms", BESU Shibpur, March 14-16, 2013. Topic: Convexity of Point Sets.

11. Special lectures in Research Promotion Workshop on "Introduction to Graph and Geometric Algorithms", IIITDM Jabalpur, November 1-3, 2012. Topic: Introduction to Approximation Algorithms.

Professional Activities since 2012:

1. Adjunct faculty of School of Mathematical science, Ramkrishna Mission Vivekananda University since August, 2015.

2. Serving Program Committee Chair for CALDAM 2020, 6th Annual International Conference on Algorithms and Discrete Applied Mathematics IIT Hyderabad, India February 13-15, 2020.

3. Served Program Committee of WALCOM 2012, CALDAM 2015, CALDAM 2016, CALDAM 2017, CALDAM 2018, CALDAM 2019, CALDAM 2020, CALDAM 2021, CALDAM 2022, 2023, 2024, 2025.

4. In the Editorial board of *ISRN Discrete Mathematics*, Hindawi Publishing Corporation.

5. Reviewer of different International Journal/Conferences, e.g.,

   Information Processing Letters from Elsevier Science, *Theoretical Computer Science* from Elsevier Science, *IEEE Transactions on Mobile Computing*, *Journal of Electronic Testing* from Kluwer Academic Publishers, *IEE Proc. Computers & Digital Techniques*, *Integration, the VLSI journal*, *Journal of Parallel and Distributed Computing* from Elsevier Science, it Journal of Discrete and Cmputational Geometry from Springer.

Academic/research visits excluding technical paper presentations after 1st March, 2012:

Outside India

1. Department of Statistics and Data Science at the Wharton School, University of Pennsylvania, USA for a research visit during October 30, 2024 to December 6, 2024.

2. LIMOS, Universit Clermont Auvergne in Clermont-Ferrand, France during the period of 15 September 2021 to 17 November 2021 as part of the research program of IFCAM project MA/IFCAM/18/39 titled "Applications of graph homomorphisms".

3. LaBRI, Universit de Bordeaux, France in March 30-April 28 2019, as part of the research program of IFCAM project MA/IFCAM/18/39.

4. Visiting Professor, School of Computing Science, *Simon Fraser University*, Burnaby, Canada, during 5th June 2018 to 24th August 2018.

5. *On Erdos-Sekeres Theorem, Upper Uounds and Related Results*, Moscow State University, Russia, Oct. 15-17, 2014.

6. Visiting Professor, School of Computing Science, *Simon Fraser University*, Burnaby, Canada, during June-August, 2014.

Within India

7. On *Design analysis of Algorithms*, SV-NIT, Surat, May 26-27, 2016.

8. On *Design analysis of Algorithms*, SV-NIT, Surat, May 21-22, 2015.

9. On *Introduction to Graph and Geometric Algorithms*, University of Kashmir, Srinagar, May 15-20, 2015.

10. On *approximation algorithm*, NIT Visvesvaraya, Nagpur, January 15-17, 2015.

11. On *Introduction to Graph and Geometric Algorithms*, IIITM-Kerala, Thiruvananthapuram, January 23-25, 2014.

12. On *approximation algorithm*, NIT Warangel, Oct. 23-25, 2013.

13. Visiting Professor, City College, CUNY, Department of Computer Science, New York, USA , during April 22 - May 12, 2013.

14. On *Introduction to Graph and Geometric Algorithms*, IIIT DM, Jabalpur, Nov. 1-3, 2012.