

List of Publications

SHANTANU DAS

Books or Book Chapter:

- [1] Shantanu Das, “Graph Explorations with Mobile Agents”, In Book: Distributed Computing By Mobile Entities, Chapter 16, Springer, 2019. https://doi.org/10.1007/978-3-030-11072-7_16
- [2] Shantanu Das and Nicola Santoro, “Moving and Computing Models: Agents”, In Book: Distributed Computing By Mobile Entities, Chapter 2, Springer, 2019. https://doi.org/10.1007/978-3-030-11072-7_2
- [3] Shantanu Das and Sébastien Tixeuil, “SIROCCO 2017: Post-proceedings”, LNCS 10641, 2017. <https://doi.org/10.1007/978-3-319-72050-0>
- [4] Jérémie Chalopin, Shantanu Das, and Peter Widmayer, “Deterministic Rendezvous in Arbitrary Graphs: Overcoming Anonymity, Failures and Uncertainty”, Search Theory: A Game Theoretic Perspective, Springer, Chapter 12, pp.175, 2013. <https://dx.doi.org/10.1007/978-1-4614-6825-7>

Peer-reviewed Scientific Journals:

- [5] Jérémie Chalopin, Shantanu Das, Yann Disser, Arnaud Labourel and Matus Mihalák, “Collaborative Delivery on a Fixed Path with Homogeneous Energy-Constrained Agents”, Theoretical Computer Science, Volume 868, pages 87-96, 2021. <https://doi.org/10.1016/j.tcs.2021.04.004>
- [6] Andreas Bärtschi, Evangelos Bampas, Jérémie Chalopin, Shantanu Das, Christina Karousatou and Matus Mihalák, “Near-gathering of energy-constrained mobile agents”. Theoretical Computer Science, Volume 849, pages 35-46, 2021. <https://doi.org/10.1016/j.tcs.2020.10.008>
- [7] Gianlorenzo D’Angelo, Mattia D’Emidio, Shantanu Das, Alfredo Navarra, and Giuseppe Prencipe, “Asynchronous Silent Programmable Matter Achieves Leader Election and Compaction”, IEEE Access, Vol. 8, pages 207619-207634, 2020 <https://doi.org/10.1109/ACCESS.2020.3038174>
- [8] Andreas Bärtschi, Jérémie Chalopin, Shantanu Das, Yann Disser, Barbara Geissmann, Daniel Graf, Arnaud Labourel and Matus Mihalák. “Collaborative Delivery with Energy-Constrained Mobile Robots”. Theoretical Computer Science, Vol. 810, pages 2–14, 2020. <https://doi.org/10.1016/j.tcs.2017.04.018>
- [9] Shantanu Das, Paola Flocchini, Giuseppe Prencipe, and Nicola Santoro, “Forming Sequences of Patterns With Luminous Robots”, IEEE Access, vol. 8, pages 90577-90597, 2020. <https://doi.org/10.1109/ACCESS.2020.2994052>
- [10] Shantanu Das, Riccardo Focardi, Flaminia Luccio, Euripides Markou, and Marco Squarcina, “Gathering of Robots in a Ring with Mobile Faults”, Theoretical Computer Science, Vol. 764, pages 42–60, 2019. <https://doi.org/10.1016/j.tcs.2018.05.002>

- [11] Shantanu Das, Dariusz Dereniowski, and Christina Karousatou, “Collaborative Exploration of Trees by Energy-Constrained Mobile Robots”, *Theory of Computing Systems*, Vol. 62, Issue 5, pages 1223–1240, 2018. <https://doi.org/10.1007/s00224-017-9816-3>
- [12] Shantanu Das, Paola Flocchini, Giuseppe Prencipe, Nicola Santoro, Masafumi Yamashita, “Autonomous mobile robots with lights”, *Theoretical Computer Science*, Vol. 609, pages 171-184, 2016. <https://doi.org/10.1016/j.tcs.2015.09.018>
- [13] Jérémie Chalopin, Shantanu Das, Yann Disser, Matus Mihalak, and Peter Widmayer, “Mapping simple polygons: The power of telling convex from reflex”, *ACM Transactions on Algorithms*, Vol. 11(4):33, 2015. <https://doi.org/10.1145/2700223>
- [14] Shantanu Das, Paola Flocchini, Nicola Santoro, and Masafumi Yamashita “Forming sequences of geometric patterns with oblivious mobile robots”, *Distributed Computing (Springer)*, Vol. 28(2), pages 131-145, 2015. <http://dx.doi.org/10.1007/s00446-014-0220-9>
- [15] Jérémie Chalopin, Shantanu Das, Arnaud Labourel and Euripides Markou, “Tight bounds for black hole search with scattered agents in synchronous rings”, *Theoretical Computer Science*, Vol. 509, pages 70-85, 2013. <https://doi.org/10.1016/j.tcs.2013.02.010>
- [16] Jérémie Chalopin, Shantanu Das, Yann Disser, Matus Mihalak, and Peter Widmayer, “Simple Agents Learn to Find Their Way: An Introduction on Mapping Polygons”, *Discrete Applied Mathematics*, 161(10-11), pages 1287–1307, 2013. <http://dx.doi.org/10.1016/j.dam.2013.01.006>
- [17] Andreas Emil Feldmann, Shantanu Das, and Peter Widmayer, “Corner cuts are close to optimal: From solid grids to polygons and back”, *Discrete Applied Mathematics*, 161(7-8), pages 970–998, 2013. <http://dx.doi.org/10.1016/j.dam.2012.12.002>
- [18] Jérémie Chalopin, Shantanu Das, Yann Disser, Matus Mihalak, and Peter Widmayer, “Mapping Simple Polygons: How Robots Benefit from Looking Back”, *Algorithmica*, 65(1), pages 43-59, 2013. <http://dx.doi.org/10.1007/s00453-011-9572-8>
- [19] Shantanu Das, Beat Gfeller, and Peter Widmayer, “Computing All Best Swaps for Minimum-Stretch Tree Spanners”, *Journal of Graph Algorithms and Applications*, 14(2), pages 287-306, 2010. <http://jgaa.info/accepted/2010/DasGfellerWidmayer2010.14.2.pdf>
- [20] Shantanu Das, Hai Liu, Amiya Nayak, and Ivan Stojmenovic, “A Localized Algorithm for Bi-Connectivity of Connected Mobile Robots”, *Telecommunication Systems*, 40(3-4), pages 129-140, 2009.
- [21] Yao Chen, Shantanu Das, Pulak Dhar, Abdulmotaleb El-Saddik, and Amiya Nayak, “Detecting and Preventing IP-spoofed Distributed DoS Attacks”, *International Journal of Network Security*, 7(1), pages 69-80, 2008.
- [22] Shantanu Das, Paola Flocchini, Shay Kutten, Amiya Nayak, and Nicola Santoro, “Map Construction of Unknown Graphs by Multiple Agents”, *Theoretical Computer Science*, 385(1-3), pages 34-48, 2007.
- [23] Mourad Elhadef, Shantanu Das and Amiya Nayak, “System-Level Fault Diagnosis Using Comparison Models: An Artificial-Immune-Systems-Based Approach”, *Journal of Networks*, Vol. 1, No. 5, pages 43-53, 2006.

International Conference Proceedings:

- [24] Shantanu Das, Nikos Giachoudis, Flaminia L. Luccio, Euripides Markou. “Broadcasting with mobile agents in dynamic networks”, In *Proc. 23rd International Conference on Principles of Distributed Systems (OPODIS)*, pages 24:1–24:16, 2020. <https://doi.org/10.4230/LIPICs.OPODIS.2020.24>

- [25] Gianlorenzo D’Angelo, Mattia D’Emidio, Shantanu Das, Alfredo Navarra, Giuseppe Prencipe, “Leader Election and Compaction for Asynchronous Silent Programmable Matter”, In Proc. 19th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2020), pages 276-284, 2020. <http://www.ifaamas.org/Proceedings/aamas2020/pdfs/p276.pdf>
- [26] Shantanu Das, Giuseppe Antonio Di Luna, Paola Flocchini, Nicola Santoro, Giovanni Viglietta, Masafumi Yamashita, “Oblivious Permutations on the Plane”, In Proc. 23rd International Conference on Principles of Distributed Systems (OPODIS), LIPIcs, Vol. 153, pages 24:1–24:16, 2019. <https://doi.org/10.4230/LIPIcs.OPODIS.2019.24>
- [27] J r mie Chalopin, Shantanu Das, Yann Disser, Arnaud Labourel and Matus Mihal k, “Collaborative Delivery on a Fixed Path with Homogeneous Energy-Constrained Agents”, In Proc. 26th International Colloquium on Structural Information and Communication Complexity (SIROCCO), pages 139-153, 2019.
- [28] Andreas B rtschi, Evangelos Bampas, J r mie Chalopin, Shantanu Das, Christina Karousatou and Matus Mihal k, “Near-gathering of energy-constrained mobile agents” In Proc. 26th International Colloquium on Structural Information and Communication Complexity (SIROCCO), pages 52-65, 2019.
- [29] Shantanu Das, Giuseppe Antonio Di Luna and Leszek Gasieniec, “Patrolling on Dynamic Ring Networks”, In Proc. Int. Conf. on Current Trends in Theory and Practice of Computer Science (SOFSEM), pages 150-163, 2019.
- [30] Shantanu Das, Nikos Giachoudis, Flaminia Luccio and Euripides Markou, “Gathering of Robots in a Grid with Mobile Faults”, In Proc. Int. Conf. on Current Trends in Theory and Practice of Computer Science (SOFSEM), pages 164-178, 2019.
- [31] Shantanu Das, Giuseppe A. Di Luna, Linda Pagli, and Giuseppe Prencipe, “Compacting and Grouping Mobile Agents on Dynamic Rings” In Proc. 15th Annual Conference on Theory and Applications of Models of Computation (TAMC), pages 114-133, 2019.
- [32] Shantanu Das, Dariusz Dereniowski, and Przemyslaw Uznanski, “Brief Announcement: Energy Constrained Depth First Search”, In Proc. Int. Coll. on Automata, Languages and Programming (ICALP) pages 165:1-165:5, 2018. <https://arxiv.org/abs/1709.10146>
- [33] Evangelos Bampas, Shantanu Das, Dariusz Dereniowski and Christina Karousatou. “Collaborative delivery by energy-sharing low-power mobile robots”. In Proc. 13th International Symposium on Algorithms and Experiments for Wireless Networks (ALGOSENSORS), 2017.
- [34] Andreas B rtschi, J r mie Chalopin, Shantanu Das, Yann Disser, Daniel Graf, Jan Hackfeld and Paolo Penna. “Energy-efficient Delivery by Heterogenous Mobile Agents”. In Proc. 34th International Symposium on Theoretical Aspects of Computer Science (STACS), pages 10:1-10:14, 2017. <http://drops.dagstuhl.de/opus/volltexte/2017/7023>
- [35] Shantanu Das, Giuseppe Antonio Di Luna, Paola Flocchini, Nicola Santoro, Giovanni Viglietta. “Mediated Population Protocols: Leader Election and Applications”, In Proc. 14th Annual Conference on Theory and Applications of Models of Computation (TAMC), pages 172-186, 2017.
- [36] Piotr Borowiecki, Shantanu Das, Dariusz Dereniowski and Lukasz Kuszner. “Distributed Evacuation in Graphs with Multiple Exits” In Proc. 23rd International Colloquium on Structural Information and Communication Complexity (SIROCCO), LNCS 9988, pages 228-241, 2016.
- [37] Andreas B rtschi, J r mie Chalopin, Shantanu Das, Yann Disser, Barbara Geissmann, Daniel Graf, Arnaud Labourel and Matus Mihal k. “Collaborative Delivery with Energy-Constrained Mobile Robots”. In Proc. 23rd International Colloquium on Structural Information and Communication Complexity (SIROCCO), LNCS 9988, pages 258-274, 2016.

- [38] Shantanu Das, Riccardo Focardi, Flaminia Luccio, Euripides Markou, Davide Moro and Marco Squarcina, “Gathering of Robots in a Ring with Mobile Faults”, In Proc. 17th Italian Conference on Theoretical Computer Science (ICTCS), 2016.
- [39] Jérémie Chalopin, Shantanu Das, Pawel Gawrychowski, Adrian Kosowski, Arnaud Labourel and Przemyslaw Uznanski, “Limit behavior of the Multi-Agent Rotor-Router System”, In Proc. 29th International Symposium on Distributed Computing (DISC), LNCS 9363, pages 123-139, 2015.
- [40] Shantanu Das, Flaminia L. Luccio and Euripides Markou, “Mobile Agents Rendezvous in spite of a Malicious Agent”, In Proc. 11th Symposium on Algorithms and Experiments for Sensor Systems, Wireless Networks and Distributed Robotics (ALGOSENSORS), LNCS 9536, pages 211-224, 2015.
- [41] Shantanu Das, Dariusz Dereniowski, and Christina Karousatou, “Collaborative Exploration by Energy-Constrained Mobile Robots”, In 22nd International Colloquium on Structural Information and Communication Complexity (SIROCCO), LNCS 9439, pages 357-369, 2015.
- [42] Shantanu Das, Dariusz Dereniowski, Adrian Kosowski, Przemyslaw Uznanski, “Rendezvous of Distance-Aware Mobile Agents in Unknown Graphs”, In Proc. 21st International Colloquium on Structural Information and Communication Complexity (SIROCCO), LNCS 8576, pages 295-310, 2014.
- [43] Shantanu Das, Paola Flocchini, Giuseppe Prencipe, Nicola Santoro, “Synchronized Dancing of Oblivious Chameleons”, In Proc. 7th Int. Conference on Fun with Algorithms (FUN), LNCS Volume 8496, pages 113-124, 2014.
- [44] Eduardo Mesa-Barrameda, Shantanu Das, and Nicola Santoro, “Uniform Dispersal of Asynchronous Finite-State Mobile Robots in Presence of Holes”, In Proc. 9th Int. Symp. on Algorithms and Experiments for Sensor Systems, Wireless Networks and Distributed Robotics (ALGOSENSORS), pages 228-243, 2013.
- [45] Jérémie Chalopin, Shantanu Das, Matus Mihalak, Paolo Penna, and Peter Widmayer, “Data-Delivery by Energy-Constrained Mobile Robots”, In Proc. 9th Int. Symp. on Algorithms and Experiments for Sensor Systems, Wireless Networks and Distributed Robotics (ALGOSENSORS), pages 111-122, 2013.
- [46] Zohir Bouzid, Shantanu Das, and Sébastien Tixeuil, “Gathering of Mobile Robots Tolerating Multiple Crash Faults”, In Proc. 33rd International Conference on Distributed Computing Systems (ICDCS), pages 337-346, 2013.
- [47] Shantanu Das, Shay Kutten, and Zvi Lotker, “Distributed Verification using Mobile Agents”, In Proc. 14th International Conference on Distributed Computing and Networking (ICDCN), LNCS 7730, pages 330–344, 2013.
- [48] Shantanu Das, Paola Flocchini, Giuseppe Prencipe, Nicola Santoro and Masafumi Yamashita, “The Power of Lights: Synchronizing Asynchronous Robots using Visible Bits”, In Proc. 32nd International Conference on Distributed Computing Systems (ICDCS), pages 506-515, 2012.
- [49] Jérémie Chalopin, Shantanu Das, Arnaud Labourel and Euripides Markou, “Black Hole Search with Finite Automata Scattered in a Synchronous Torus”, In Proc. 25th International Symposium on Distributed Computing (DISC), LNCS 6950, pages 432–446, 2011.
- [50] Jérémie Chalopin, Shantanu Das, Arnaud Labourel and Euripides Markou, “Tight Bounds for Scattered Black Hole Search in a Ring”, In Proc. 18th International Colloquium on Structural Information and Communication Complexity (SIROCCO), LNCS 6796, pages 186–197, 2011.
- [51] Andreas Emil Feldmann, Shantanu Das, and Peter Widmayer, “Restricted Cuts for Bisections in Solid Grids”, In Proc. 37th International Workshop on Graph Theoretic Concepts in Computer Science (WG), 2011.

- [52] Jérémie Chalopin, Shantanu Das, Yann Disser, Matus Mihalak, and Peter Widmayer, “Telling convex from reflex allows to map a polygon”, In Proc. 28th International Symposium on Theoretical Aspects of Computer Science (STACS), LIPIcs Volume 9, pages 153-164, 2011.
- [53] Jérémie Chalopin, Shantanu Das, and Adrian Kosowski, “Constructing a Map of an Anonymous Graph: Applications of Universal Sequences”, In Proc. 14th International Conference on Principles of Distributed Systems (OPODIS), LNCS 6490, pages 119-134, 2010.
- [54] Andreas Emil Feldmann, Shantanu Das, and Peter Widmayer, “Simple Cuts are Fast and Good: Optimum Right-Angled Cuts in Solid Grids”, In Proc. 4th International Conference on Combinatorial Optimization and Applications (COCOA), LNCS 6508, pages 11-20, 2010.
- [55] Jérémie Chalopin, Shantanu Das, and Peter Widmayer, “Rendezvous of Mobile Agents in Directed Graphs”, In Proc. 24th International Symposium on Distributed Computing (DISC), LNCS 6343, pages 282-296, 2010
- [56] Jérémie Chalopin and Shantanu Das, “Rendezvous of Mobile Agents without Agreement on Local Orientation”, In 37th International Colloquium on Automata, Languages and Programming (ICALP), LNCS 6199, pages 515-526, 2010.
- [57] Shantanu Das, Paola Flocchini, Nicola Santoro, and Masafumi Yamashita, “On the Computational Power of Oblivious Robots: Forming a Series of Geometric Patterns”, In 29th Annual ACM Symposium on Principles of Distributed Computing (PODC), pages 267-276, 2010.
- [58] Jérémie Chalopin, Shantanu Das, Yann Disser, Matus Mihalak, and Peter Widmayer, “How simple robots benefit from looking back”, In Proc. 7th International Conference on Algorithms and Complexity (CIAC), LNCS 6078, pages 229-239, 2010.
- [59] Shantanu Das, Matus Mihalak, Rastislav Sramek, Elias Vicari and Peter Widmayer, “Rendezvous of Mobile Agents when Tokens Fail Anytime”, In Proc. 12th International Conference on Principles of Distributed Systems (OPODIS), LNCS 5401, pages 463-480, 2008.
- [60] Shantanu Das, Beat Gfeller, and Peter Widmayer, “Computing Best Swaps in Optimal Tree Spanners”, In Proc. 19th International Symposium on Algorithms and Computation (ISAAC), LNCS 5369, pages 717-728, 2008.
- [61] Eduardo Mesa Barrameda, Shantanu Das, and Nicola Santoro, “Deployment of Asynchronous Robotic Sensors in Unknown Orthogonal Environments”, In Proc. International Workshop on Algorithmic Aspects of Wireless Sensor Networks (ALGOSENSORS), LNCS 5389, pages 125-140, 2008.
- [62] Shantanu Das, “Mobile Agent Rendezvous in a Ring using Faulty Tokens”, In Proc. International Conference on Distributed Computing and Networking (ICDCN), LNCS 4904, pages 292-297, 2008.
- [63] Jérémie Chalopin, Shantanu Das, and Nicola Santoro, “Rendezvous of Mobile Agents in Unknown Graphs with Faulty Links”, In Proc. 21st International Symposium on Distributed Computing (DISC), LNCS 4731, pages 108-122, 2007.
- [64] Shantanu Das, Paola Flocchini, Nicola Santoro, and Masafumi Yamashita, “Fault-Tolerant Simulation of Message-Passing Algorithms by Mobile Agents”, In Proc. 14th Colloquium on Structural Information and Communication Complexity (SIROCCO), LNCS 4474, pages 289-303, 2007.
- [65] Shantanu Das, Hai Liu, Ajith Kamath, Amiya Nayak, and Ivan Stojmenovic, “Localized Movement Control for Fault Tolerance of Mobile Robot Networks”, In Proc. First IFIP Int. Conference on Wireless Sensor and Actor Networks (WSAN 2007), 2007.

- [66] Shantanu Das, Amiya Nayak, Stefan Rührup, and Ivan Stojmenovic, “Semi-Beaconless Power and Cost Efficient Georouting with Guaranteed Delivery using Variable Transmission Radii for WSNs”, 3rd Int. Workshop on Localized Communication and Topology Protocols for Ad hoc Networks (LOCAN), 2007.
- [67] Shantanu Das, Paola Flocchini, Amiya Nayak, and Nicola Santoro, “Effective Elections for Anonymous Mobile Agents”, In Proc. 17th International Symposium on Algorithms and Computation (ISAAC), LNCS 4288, pages 732-743, 2006.
- [68] Shantanu Das, Shay Kutten, and Ayelet Yifrach, “Improved Distributed Exploration of Anonymous Networks”, In Proc. International Conference on Distributed Computing and Networking (ICDCN), LNCS 4308, pages 306-318, 2006.
- [69] Jérémie Chalopin, Shantanu Das, and Nicola Santoro, “Groupings and Pairings in Anonymous Networks”, In Proc. 20th International Symposium on Distributed Computing (DISC), LNCS 4167, pages 105-119, 2006.
- [70] Mourad Elhadef, Shantanu Das, and Amiya Nayak, “A Novel Artificial-Immune-Based Approach for System-Level Fault Diagnosis”, In Proc. of First International Conference on Availability, Reliability and Security (ARES), IEEE Computer Society, pages 166-173, 2006.
- [71] Shantanu Das, Paola Flocchini, Amiya Nayak, and Nicola Santoro, “Distributed Exploration of an Unknown Graph”, In Proc. 12th Colloquium on Structural Information and Communication Complexity (SIROCCO), Le Mont Saint-Michel, LNCS 3499, pages 99-114, 2005.
- [72] Shantanu Das and Rana Barua, “Finite Field Arithmetic using Self-Assembly of DNA Tilings”, In Proc. IEEE Congress on Evolutionary Computation (CEC 2003), Canberra, Australia, pages 2529-2536 (Vol. 4), 2003.

Invited Articles:

- [73] Shantanu Das, “Mobile Agents in Distributed Computing: Network Exploration”, Bulletin of the European Association for Theoretical Computer Science (EATCS), No. 109, pages 54–69, February 2013.