Debasish Pattanayak

drdebmath@gmail.com
drdebmath.github.io

Experience

University of Vienna | SERB OVDF Fellow
Prof. Stefan Schmid July 2019 - December 2019

- To design distributed algorithms for robots with minimal capabilities in the context of pattern formation, evacuation and convergence.

Japan Advance Institute of Science and Technology | Visiting Researcher
Prof. Atsuko Miyaji May - July 2013

- Explored methods of fast scalar multiplication in elliptic curve with faster point addition including tripling and halving.
- Used hybrid base chain expansion of integers and joint forms.

Projects

Study of Negative Continued Fractions | BTech Project
Dr. Vinay Wagh Aug 2013 - April 2014

- Explored the simple continued fraction and its properties.
- Investigated Negative continued fraction, its properties and relation with simple continued fraction.
- Proposed an algorithm for factorization of integers using negative continued fraction.

Publications

- Debasish Pattanayak, Kaushik Mondal, Partha Sarathi Mandal, and Stefan Schmid. Convergence of even simpler robots without position information. In *Networked Systems - 5th International Conference, NETYS 2017, Marrakech, Morocco, May 17-19, 2017, Proceedings*, pages 69–85, 2017.
- Debasish Pattanayak, Kaushik Mondal, H. Ramesh, and Partha Sarathi Mandal. Gathering of mobile robots with weak multiplicity detection in presence of crash-faults. *J. Parallel Distrib. Comput.*, 123:145–155, 2019.
- Debasish Pattanayak, H. Ramesh, and Partha Sarathi Mandal. Chauffeuring a crashed robot from a disk. In *Algorithms for Sensor Systems - 15th International Symposium on Algorithms and Experiments for Wireless Sensor Networks, ALGOSENSORS 2019, Munich, Germany, September 12-13, 2019, Revised Selected Papers*, pages 177–191, 2019.
- Debasish Pattanayak, H. Ramesh, Partha Sarathi Mandal, and Stefan Schmid. Evacuating two robots from two unknown exits on the perimeter of a disk with wireless communication. In *Proceedings of the 19th International Conference on Distributed Computing and Networking, ICDCN 2018, Varanasi, India, January 4-7, 2018*, pages 20:1–20:4, 2018.
- Dibakar Saha, Debasish Pattanayak, and Partha Sarathi Mandal. Surveillance of uneven surface with unmanned aerial vehicles. In *Proceedings of the 21st International Conference on Distributed Computing and Networking, ICDCN 2020, Kolkata, India, January 4-7, 2020 (To appear)*.

Education

Ph.D. | Theoretical Computer Science
Department of Mathematics, IIT Guwahati
Advisors: Prof. Partha Sarathi Mandal & Dr. H. Ramesh
2014-Present

- Research: Distributed Algorithms, Mobile Robots, Self-stabilization, Fault-tolerance

B.Tech. | Mathematics and Computing
Department of Mathematics, IIT Guwahati
2010 - 2014

Skills

Programming
•C •C++ •Python •LaTeX•HTML •CSS •MATLAB •Mathematica

OS
•Windows •Mac •Linux

Languages
•Odia •English •Hindi • Japanese

Teaching

IIT Guwahati | Teaching Assistant

- MA253: Data Structures Lab with OOP
- MA423: Matrix Computations Lab
- MA511: Computer Programming Lab
- MA512: Data Structures and Algorithms Lab

Awards

- SERB Overseas Visiting Doctoral Fellowship 2018-2019
- Qualified IIT-JEE 2010 among top 0.7%
- National Talent Search Examination (NTSE) Scholarship 2008
- 8^{th} position in HSCE, Odisha 2008
- Silver Medal in Regional Mathematics Olympiad, 2007

Community

- Reviewer for ICDCN 2017, ICDCN 2019, OPODIS 2019, CALDAM 2020
- Part of WALCOM 2019 Organizing Committee