Third Asian Symposium on Cellular Automata Technology (ASCAT-2024)

February 29-March 2, 2024
National Institute of Technology, Durgapur, India

Aims and Scope of the Conference: The Aim of the symposium is two-fold: to nurture the theories of cellular automata, and to explore the cellular automata as technology. So all the theoretical aspects of cellular automata and their applications in any domain are within the scope of this symposium. In particular, the topics of interest include (but are not limited to) the following:

A: Algebraic and Theoretical aspects of CA
- Algorithmic and Complexity issues in Cellular Automata
- Formal Language Processing
- Cellular Automata and Logic
- Randomness
- Reversibility and Cycle structure
- Algebraic properties of Cellular Automata and Discrete Systems
- Characterization tools for Cellular Automata
- Conservation Laws and Cellular Automata

B. Cellular Automata Models and Computation
- Traffic models and Crowd dynamics
- Models for Distributed and Parallel Systems
- Lattice Gas and Lattice Boltzmann model
- Environmental, Social and Economical Modeling and Simulation
- Natural Computing
- Reversible and Quantum Computing
- Cellular Automata Arch. for Computation
- Cellular Automata for Computing-in-Memory Architecture
- Cellular Automata with Memory
- Integration of CA and Agent-based Modeling
- Sandpile Cellular Automata

C. Non-uniformity in Cellular Automata
- Non-uniform or Hybrid CA
- Asynchronous Cellular Automata
- Stochastic Cellular Automata
- Network Automata

D. Cellular Automata, Hardware Design & Security
- Circuit Design and Computer Architecture
- Memristor Design
- Security and Encryption
- Cryptography
- Secured Hardware Design

E. Quantum-dot Cellular Automata
- Logic Gates and Circuit Design
- Quiescent Quantum Cellular Automata
- Quantum Gate Cellular Automata
- Universal Quantum Cellular Automata
- Quantum Computing
- Quantum Lattice gases
- Quantum Reversible Automata
- Quantum Nano-Automata

G. Emerging Applications of Cellular Automata
- Ecological Issues
- Urban Development
- Graph Colouring
- Sensor Network Applications

F. Cellular Automata, Machine Learning and Artificial Intelligence
- Pattern Recognition
- Machine Learning
- Bioinformatics
- Image and Video Processing

Conference Website	https://nitdgp.ac.in/ascat2024/
Submission Link	**https://easychair.org/conferences/?conf=ascat2024**
Submission Deadline	~~Monday, October 16, 2023~~ **Tuesday, October 31, 2023**
Notification of acceptance	Monday, December 11, 2023
Camera-ready papers	Friday, December 22, 2023

Submission: Authors are invited to submit original, unpublished research papers typewritten in English that are not more than 12 pages (single column including figures, tables, and references) via the EasyChair system at **https://easychair.org/conferences/?conf=ascat2024**.
Submissions must be in LaTeX(Springer) format and submitted in Portable Document Format (PDF). For each accepted paper, at least one author has to complete full registration and present the paper.
Proceedings Accepted papers of the conference will appear in the proceedings published by Springer Nature in the book series **CCIS (Communications in Computer and Information Science)**.
Special Issue Extended versions of a selected number of papers presented at the conference is planned to be published in a special issue of **Natural Computing (NaCo)**.

General co-chairs
- Suchismita Roy (NIT, Durgapur, India)
- Biplab K Sikdar (IIEST, Shibpur, India)
- Kenichi Morita (Hiroshima University, Japan)

Programme co-chairs
- Mamata Dalui (NIT, Durgapur, India)
- Sukanta Das (IIEST, Shibpur, India)
- Enrico Formenti (Universite Côte d'Azur, France)

Organizing co-chairs
- Bibhash Sen (NIT, Durgapur, India)
- Ankush Acharyya (NIT, Durgapur, India)
- Suvadip Batabyal (NIT, Durgapur, India)

Program Committee
- Kenichi Morita (Hiroshima University, Japan)
- Biplab K Sikdar (IIEST, Shibpur, India)
- Pabitra Pal Chaudhuri (ISI, Kolkata, India)
- Enrico Formenti (University Côte d'Azur, France)
- Huynh Xuan Hiep (Can Tho University, Vietnam)
- Anna Lawniczak (Guelph University, Canada)
- Stefano Nichele (Oslo Metropolitan University - OsloMet, Norway)
- Teijiro Isokawa (University of Hyogo, Japan)
- Hiroshi Umeo (University of Osaka Electro-Communication, Japan)
- Rezki Chemlal (University of Bejaia, Algeria)
- Pedro Paulo Balbi de Oliveira (Universidade Presbiteriana Mackenzie, Brazil)
- Sudhakar Sahoo (IMA, Bhubaneswar, India)
- Nazma Naskar (KIIT University, India)
- Jimmy Jose (NIT, Calicut, India)
- Raju Hazari (NIT, Calicut, India)
- Kamalika Bhattacharjee (NIT, Tiruchirappalli, India)
- Souvik Roy (Bennett University, India)
- Supreeti Kamilya (BIT, Mesra, India)
- Sukanya Mukherjee (IEM, Kolkata, India)
- Sumit Adak (Technical University of Denmark, Denmark)
- Genaro Juarez Martinez (National Polytechnic Institute, Mexico)
- Sukanta Das (IIEST, Shibpur, India)
- Suchismita Roy (NIT, Durgapur, India)
- Bibhash Sen (NIT, Durgapur, India)
- Mamata Dalui (NIT, Durgapur, India)

Contact

Bibhash Sen (bsen.cse@nitdgp.ac.in)
Department of Computer Science and Engineering
National Institute of Technology, Durgapur, India.

Mamata Dalui (mdalui.cse@nitdgp.ac.in)
Department of Computer Science and Engineering
National Institute of Technology, Durgapur, India.