Second Asian Symposium on Cellular Automata Technology, 2023
(ASCAT 2023)
March 2-4, 2023, Kolkata (India)
http://www.cellularautomata.in/ascat2023

<u>Call for Papers</u>

Important Dates:

Paper Submission deadline:	Friday, October 21, 2022
Notification of acceptance:	Friday, December 16, 2022
Deadline for camera-ready papers:	Tuesday, January 02, 2023

Aims and Scope of the Conference:

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 is 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 Architecture for Computation

- Cellular Automata for Computing-in-Memory Architecture
- 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 and Security*
- Circuit Design and Computer Architecture
- Quantum-dot Cellular Automata
- Memristor Design
- Security and Encryption
- Cryptography
- Secured Hardware Design

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

Submissions:

Authors are invited to submit original, unpublished research papers of article typewritten in English that are not more than 12 pages (single column including figures, tables and references) via the EasyChair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=ascat2023

Submissions must be formatted in LaTeX 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 AISC (Advances in Intelligent Systems and Computing).

Special Issue:

Extended versions of a selected number of papers presented at the conference is planned to be published in a special issue of the …

Tentative Registration fees:

Early Registration: 300 USD (General), Rs. 5000/- (Indian)
Student Registration: 200 USD (General), Rs. 4000/- (Indian)
Late Registration: 400 USD (General), Rs. 6000/- (Indian)

Chief Patron:
- Prof. Parthasarathi Chakrabarti (Indian Institute of Engineering Science and Technology, Shibpur, India)

General co-chairs:
- Biplab K Sikdar (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Kenichi Morita (Hiroshima University, Japan)

Programme co-chairs:
- Sukanta Das (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Genaro Juarez Martinez (National Polytechnic Institute, Mexico City, Mexico)

Program committee:

- Biplab K Sikdar (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Kenichi Morita (Hiroshima University, Japan)
- Pabitra Pal Chaudhuri (Indian Statistical Institute, Kolkata, India)
- Sudhakar Sahoo (Institute of Mathematics and Applications, Bhubaneswar, India)
- Mamata Dalui (National Institute of Technology, Durgapur, India)
- Nazma Naskar (Kalinga Institute of Industrial Technology University, India)
- Raju Hazari (National Institute of Technology, Calicut, India)
- Kamalika Bhattacharjee (National Institute of Technology, Tiruchirappalli, India)
- Souvik Roy (C3iHub, Indian Institute of Technology, Kanpur, India)
- Supreeti Kamilya (Birla Institute of Technology, Mesra, India)
- Sukanya Mukherjee (Institute of Engineering and Management, Kolkata, India)
- Sumit Adak ()
- Genaro Juarez Martinez (National Polytechnic Institute, Mexico City, Mexico)
- Sukanta Das (Indian Institute of Engineering Science and Technology, Shibpur, India)

Registration Chair:

- Sukanya Mukherjee (Institute of Engineering and Management, Kolkata, India)
- Nazma Naskar (Kalinga Institute of Industrial Technology University, India)
- Khitish Gadnayak (National Institute of Technology, Durgapur)

Publicity Chair:

- Sudhakar Sahoo (Institute of Mathematics and Applications, Bhubaneswar, India)
- Mamata Dalui (National Institute of Technology, Durgapur, India)
- Kamalika Bhattacharjee (National Institute of Technology, Tiruchirappalli, India)

Web Chair:

- Souvik Roy (C3iHub, Indian Institute of Technology, Kanpur, India)
- Subrata Paul (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Sutapa Chatterjee ()

Organising Committee:

- Biplab K. Sikdar (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Abhik Mukherjee (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Amit Roy Chowdhury (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Chandan Giri (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Surajit Roy (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Ashish Layek (Indian Institute of Engineering Science and Technology, Shibpur, India)
- Sukanta Das (Indian Institute of Engineering Science and Technology, Shibpur, India)

Contact:

- Sukanta Das
  Department of Information Technology,

Indian Institute of Engineering Science and Technology, Shibpur, India.
Email: sukanta@it.iiests.ac.in

● Biplab K Sikdar
Department of Computer Science and Engineering,
Indian Institute of Engineering Science and Technology, Shibpur, India.
E-mail: biplab@cs.iiests.ac.in