Special Section on Mathematical Systems Science and its Applications

The IEICE (Institute of Electronics, Information and Communication Engineers, Japan) Transactions on Fundamentals of Electronics, Communications and Computer Sciences (published in May 2025).

The IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences announce a forthcoming Special Section on Mathematical Systems Science and its Applications to be published in May 2025.

Mathematical systems science is the study of design, analysis, verification, and control based on mathematical models and it is applicable in many engineering and scientific research areas including emergent fields such as cyber-physical systems, man-machine systems, open systems science, and systems biology. The aim of this special section is to clarify the state of art of research on mathematical systems science and to promote the future research.

The topics of interest within the scope of this special section include the following areas:
- System theory (Petri net, Concurrent systems, Discrete event systems, Hybrid systems, Control theory, etc.)
- Formal methods for verification and design (Model checking, Automated theorem proving, Scheduling, Supervisory control, Mechanism design, etc.)
- Cyber-physical systems (Real-time systems, Autonomous distributed systems, Model based development)
- Mathematical approaches to human factor (Human behaviors, Business process, Social simulation, Service science, etc.)
- New trends (Systems biology, Process mining, etc.)
- AI/Machine learning and Mathematical Optimization approaches
- Applications and case studies (Embedded systems, Multi-car elevator systems, Transportation systems, MRP/ERP, Energy management systems, etc.)
We also welcome letter submissions on industrial case studies.

If there are non-members among the authors, we recommend that the authors take this opportunity to join the IEICE.
For detailed information on the IEICE Membership Application, please visit the webpage, https://www.ieice.org/eng_r/join/individual_member.html. If all authors are non-members, the article processing charge for non-members will be applied, except for invited papers.

The submitted paper will be reviewed by reviewers according to the ordinary rules of the Transaction Editorial Committee. The recommended number of pages is 8 for a PAPER and 2 for a LETTER. For the initial submission of a LETTER, the number of pages excluding References is at most 4. Please consult the Information for Authors that is available at the web page: https://www.ieice.org/eng/shiori/mokuji_ess.html

This special section will accept papers only by electronic submission. Please submit a paper using the IEICE Web site https://review.ieice.org/regist/regist_baseinfo_e.aspx. Authors should choose the "[Special-MA] Mathematical Systems Science and its Applications" as a "Journal/Section" on the online screen. Do not choose "[Regular-EA]".

Contact point:
Norihiko SHINOMIYA
Faculty of Science and Engineering, Soka University
Tel: +81-42-691-9400, e-mail: shinomi@soka.ac.jp

The deadline for the paper submission is May 17, 2024.

Please note that the term for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than 60 days because of the tight schedule for review. The final editorial decision for acceptance would be informed to the authors by December 2024. If the number of accepted papers exceeds the limit, some papers may be published in the following transactions. Authors must agree to the " COPYRIGHT TRANSFER, ARTICLE PROCESSING CHARGE AGREEMENT, and NOTICES FROM THE IEICE AND PRIVACY POLICY " via electronic submission. Upon accepted for publication, all authors should pay the page charges covering partial cost of publication around December, 2024. If payment is not completed by 25 January, 2025, your manuscript will be handled as rejection.

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