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**DESCRIPTION**

_Theoretical Computer Science_ is mathematical and abstract in spirit, but it derives its motivation from practical and everyday computation. Its aim is to understand the nature of computation and, as a consequence of this understanding, provide more efficient methodologies. All papers introducing or studying mathematical, logic and formal concepts and methods are welcome, provided that their motivation is clearly drawn from the field of computing.

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Papers published in _Theoretical Computer Science_ are grouped in three sections according to their nature. The first section ‘Algorithms, automata, complexity and games’ is devoted to the study of algorithms and their complexity using analytical, combinatorial or probabilistic methods. It includes the whole field of abstract complexity (i.e. all the results about the hierarchies that can be defined using Turing machines), the whole field of automata and language theory (including automata on infinite words and infinitary languages), the whole field of geometrical (graphic) applications and the whole field of measurement of system performance using statistical methods.

The second section, ‘Logic, semantics and theory of programming’, is devoted to formal methods to check properties of programs or implement formally described languages; it contains all papers dealing with semantics of sequential and parallel programming languages. All formal methods treating these problems are published in this section, including rewriting techniques, abstract data types, automatic theorem proving, calculi such as SCP or CCS, Petri nets, new logic calculi and developments in categorical methods.

The third section, ‘Natural Computing’, is devoted to the study of computing occurring in nature and computing inspired by nature. In the rapidly evolving field of computer science, natural computing plays an important role as the catalyst for the synergy of human designed computing with the computing going on in nature. This synergy leads to a deeper and broader understanding of the nature of computation. Although natural computing is concerned also with experiments and applications, this section of _Theoretical Computer Science_ is focused on the theoretical aspects of natural computing with clear relevance to computing. Among others, it will contain papers dealing with the theoretical issues in evolutionary computing, neural networks, molecular computing, and quantum computing.

_Theoretical Computer Science_ will now publish high-quality advanced introductions. Advanced introductions, which are by invitation only, should cover a focused topic within the scope of TCS at a
level that would be appropriate for a scientist who is new to the topic and wishes to gain an up-to-date understanding. Articles should be self-contained, including motivation and basic definitions, and proceed to advanced material and/or open problems which may - but need not - include new results. Sufficient references should be given to provide the reader with entry points to the research literature on the topic as well as the origins of the main ideas. Submissions will go through the standard review process of TCS.

AUDIENCE

Researchers in the Theoretical Aspects of Computer Science.

IMPACT FACTOR

2018: 0.718 © Clarivate Analytics Journal Citation Reports 2019

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Computer Abstracts
Engineering Index
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Introduction
Theoretical Computer Science is mathematical and abstract in spirit, but it derives its motivation from practical and everyday computation. All papers introducing or studying mathematical, logic and formal concepts and methods are welcome, provided that their motivation is clearly drawn from the field of computing.

Papers published in Theoretical Computer Science are grouped in three sections according to their nature. Algorithms, automata, complexity and games, or TCS-A, is devoted to the study of algorithms and their complexity using analytical, combinatorial or probabilistic methods. Logic, semantics and theory of programming, or TCS-B, is devoted to formal methods to check properties of programs or implement formally described languages and contains all papers dealing with semantics of sequential and parallel programming languages. Natural Computing, or TCS-C, is devoted to the study of computing occurring in nature and computing inspired by nature. This section is focused on the theoretical aspects of natural computing with clear relevance to computing. Among others, it will contain papers dealing with the theoretical issues in evolutionary computing, neural networks, molecular computing, and quantum computing. Any queries about submissions and peer review should be addressed to the TCS editorial office: tcs@elsevier.com.

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The practice of peer review is to ensure that good science is published. It is an objective process at the heart of good scholarly publishing and is carried out by all reputable scientific journals. Our referees therefore play a vital role in maintaining the high standards of *Theoretical Computer Science* and all manuscripts are peer reviewed following the procedure outlined below.

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The Editor-in-Chief first screens all manuscripts. It is possible but almost unprecedented for an exceptional manuscript to be accepted at this stage. Those rejected at this stage are insufficiently original, have serious scientific flaws, have poor grammar or English language, or are outside the aims and scope of the journal.

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Referees are matched to the paper according to their expertise. We welcome suggestions for referees from the author though these recommendations may or may not be used.

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Referees are asked to evaluate whether the manuscript:

- Is original and of sufficient weight and interest
- Is sound and valid
- Fits the scope of *Theoretical Computer Science*
- Is clearly presented, including linguistic quality
- Correctly references previous relevant work

Referees will often provide suggestions for improvement, but they are not expected to proofread or copyedit manuscripts. Authors are expected to carefully check manuscripts for errors before submission.

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Manuscripts are typically reviewed within 4-5 months. Unusually long or difficult manuscripts may take longer. The time required will also be greater in cases where it is difficult to find suitably qualified referees. Should a report be unreasonably delayed, a further expert opinion may be sought. If the referees' reports contradict one another, the Handling Editor may obtain additional reviews if this is required to make a decision. Revised manuscripts are usually reviewed by the referees of the original submission, but the Handling Editor may seek input from additional reviewers.

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PREPARATION

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Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.

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Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

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