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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*.

Any queries about submissions and peer review should be addressed to the TCS editorial office: tcs@elsevier.com.

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-
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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**

2019: 0.747 © Clarivate Analytics Journal Citation Reports 2020

**ABSTRACTING AND INDEXING**

ACM Computing Reviews
Computer Abstracts
Engineering Index
INSPEC
Current Contents - Engineering, Computing & Technology
Mathematical Reviews
Journal Citation Reports - Science Edition
Science Citation Index Expanded
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We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a ‘correct format’ for acceptance and provide the items required for the publication of your article.

To find out more, please visit the Preparation section below.

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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• Journal policies detailed in this guide have been reviewed
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Peer review policy
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.
Initial manuscript evaluation

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.

Those that meet the minimum criteria are passed on to a Handling Editor who is a member of the Editorial Board with expertise in the subject area of the submission, where the screening process repeats. Those that pass this stage are passed on to at least two experts for review.

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

Referees will often provide suggestion 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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More than one revision of a manuscript may be required. A revised manuscript may be rejected on the grounds that the revision process is converging too slowly. A manuscript may be rejected for a Special Issue on the grounds that the publication schedule does not allow time for revision; in that case, the manuscript will normally be re-considered for publication in an ordinary issue.

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Divide the article into clearly defined sections.

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Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

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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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State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

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This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

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The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

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A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Keywords**

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

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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.

**Acknowledgements**

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

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List funding sources in this standard way to facilitate compliance to funder's requirements:

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