Mathematical Structures in Computer Science

Editorial policy

Mathematical Structures in Computer Science (MSCS) is a journal of theoretical computer science which focuses on the application of ideas from the structural side of mathematics and mathematical logic to computer science. The journal aims to bridge the gap between theoretical contributions and software design, publishing original papers or broad surveys with original perspectives in all areas of computing, provided that ideas or results from logic, algebra, geometry, category theory or other areas of logic and mathematics form a basis for the work. The journal also welcomes applications to computing based on the use of specific mathematical structures (e.g. topological and order-theoretic structures) as well as on proof-theoretic notions or results.

The use of logic, categorical or algebraic language just as a unifying tool for a variety of applications is appreciated, in particular if linked with relevant experimental activity. The journal will also accept contributions in new interdisciplinary fields bridging computer science, quantum physics, mathematics and information theory. In particular, papers on quantum information processing and communication, as well as on the related issues in quantum language design will be considered.

The purpose of the journal is to increase the circulation of new very high standard results in fast growing areas which are currently influencing various aspects of actual computing. Indeed, this journal is not meant to be only a 'theory journal' but, by choosing as a theme the use of mathematical methods of Computer Science independently of their area of application, it aims to highlight connections among different topics and to encourage applications of theoretical contributions.

In order to promote the use of methods from mathematics and physics in computer science, expository and introductory papers are also welcome, with the specific aim of turning the (sometimes excessively) technical jargon of specialized communities to a commonly understood language for as many working computer scientists as possible. Articles in other areas of pure mathematics may be considered as well provided that there is a clear connection to computational issues or they investigate mathematical structures whose relevance to computer science is well established. However, these contributions should be directed to the broad audience of computer scientists to which this journal is addressed. Equally, discussions of methodological or philosophical nature concerning the foundation of Computer Science are of interest for the journal.

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