

Special Issue on Foundations of Software Science and Computation Structures – Foundations of Science journal (Springer)

Human beings have attempted to reduce their workloads as much as possible since antiquity. Tools and machines have been invented to help humans decrease the physical efforts needed and dedicate their time to more important tasks such as developing and controlling these instruments. To this end, one of the major milestones in the history of humanity was the rise of computation. The term Computer Science refers to the set of scientific and technical knowledge that makes automatic information processing possible using computers.

There was immense development in Computer Science in the second half of the 20th century with the rise of different technologies (integrated circuits, Internet, etc.) which fostered the expansion of areas as important as computation, software development, communications, etc.

Nowadays, Computer Science offers human beings an immense range of possibilities for development thanks to the rise and consolidation of concepts like the Internet of Things, Cloud Computing, Big Data, cryptocurrency, etc. In order to adequately understand the current state of Computer Science, it is important to be aware of the contributions made in history to this field by such important scientists like Leibniz, Babbage, Boole, Gödel, Turing, von Neumann, Shannon, etc.

Computer Science today is at a crucial point in time as there are a number of challenges arising which will mark the development of the field in the near future and which require profound reflection among the scientific community.

The goal of this special issue is precisely to analyse the current situation of Computer Science from an epistemological, two-way perspective: looking backward as today's Computer Science is the product of all the progress that has been made throughout history; and looking forward as Computer Science is destined to be very much present in the future development of the human being.

This issue is exclusively restricted to extended versions of the best original articles on this topic published at the Data'18 conference (<http://www.iares.net/Conference/Data2018>).

The suggested list of topics includes (but is not restricted to):

- Milestones in the history of Computer Science and its disciplines.
- The role of scientists in the development of Computer Science (Turing, Boole, Leibniz, Pascal, Von Neumann, ...).
- The social impact of Computer Science today and its applications in medicine, education, social relations, etc.
- Prospective work, theories and paradigms that may be important in years to come.
- Future challenges in the area.

- Ethics in Computer Science.

- Plagiarism and nostrification.

In theory, no work merely describing historic events known in relation to Computer Science will be considered unless it proves the impact thereof on current events. Any work that sheds light on the authorship of the major advances in the history of Computer Science will be welcome. Work that proposes new methods, techniques, algorithms, etc. will be considered for publication as long as the focus of the article is on the social impact thereof, the historical evolution leading to the proposal and/or the potential future benefits. Prospective work proposing new paradigms in computation, software development or artificial intelligence will also be considered. Also welcome are articles covering the challenges facing the field.

In order to be considered for inclusion in this issue, all articles sent for the Data'18 conference must include the following text in the Acknowledgement section: "*This paper is intended for publication in the Special Issue on Foundations of Software Science and Computation Structures*". All articles selected (the authors will be notified after the conference) must include at least 50% new content with respect to the brief version presented at the conference and they must comply with the style and rules established by the journal Foundations of Science (<http://www.springer.com/philosophy/epistemology+and+philosophy+of+science/journal/10699>). If accepted for the special issue, the authors must provide the source file for the article and provide a short biographic note.

The manuscript must be original and not be under consideration for publication elsewhere. Please contact the guest editors if you have any additional questions.

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