

SPECIAL ISSUE on

Advanced Aspects of Machine Learning Algorithms for Scientific Programming

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DESCRIPTION

This special issue in [Open Computer Science](#) focuses on the machine learning algorithm for scientific programming. Scientific programming is a fascinating field, but at the same time, very complex. It is a programming language widely used for computational science and mathematics. Moreover, the scientific programming language is designed and optimized to use mathematical formulae and matrices. Such languages are characterized by the availability of libraries performing mathematical or scientific functions and by the language's syntax. Scientific programming languages help solve linear algebra, optimization, and other mathematical problems.

Machine learning is the study of computer algorithms that can expand their working automatically through experience and by the utilization of data. It is generally regarded as a part of artificial intelligence. The machine learning algorithms use training data to construct a model to make predictions or decisions without explicit programming. Machine learning is a learning process of computers, learning from data provided to carry out certain tasks. It is feasible to program algorithms that let the machine know how to execute all steps required to solve the current problem for basic and simple computer tasks. In the meantime, computers do not require any learning. However, for more advanced and complex tasks, the manual creation of required algorithms might be very difficult for a human. Practically speaking, it can be more compelling to assist the machine in developing its algorithms instead of human developers to determine each required step. These algorithms are used in various applications, such as medication, email filtering, speech recognition, and computer vision. It is unfeasible to develop conventional algorithms to perform the required duties. This special issue looks forward to collecting the recent research that applies modern scientific programming to enhance machine learning.

We would like to encourage researchers and scientists to develop advanced machine learning algorithms based on scientific programming. Therefore, we welcome high-quality work that focuses on research, development, and application in the areas mentioned above. Potential topics include but are not limited to the following:

- Advances in scientific programming and machine/deep learning
- Scientific programming and machine/deep learning
- Solutions of complex mathematical problems by scientific programming
- Machine/deep learning algorithms for mathematical problems
- Application of scientific programming in image processing
- Scientific programming and machine/deep learning for data analytics
- Artificial intelligence and scientific programming in healthcare
- Artificial intelligence and environmental engineering
- Artificial intelligence and cyber-security
- Application of machine learning and scientific programming
- Machine/deep learning and scientific programming for cyber physical systems.

Authors are requested to submit their full revised papers complying the general scope of the journal. The submitted papers will undergo the standard peer-review process before they can be accepted. Notification of acceptance will be communicated as we progress with the review process.

HOW TO SUBMIT

Before submission authors should carefully read the [Instruction for Authors](#), available online at:

https://www.degruyter.com/publication/journal_key/COMP/downloadAsset/COMP_Instruction%20for%20Authors.pdf

Manuscripts can be written in TeX, LaTeX (strongly recommended) - the journal's [LATEX template](#). Please note that we do not accept papers in Plain TEX format. Text files can be also submitted as standard DOCUMENT (.DOC) which is acceptable if the submission in LATEX is not possible. **For an initial submission, the authors are strongly advised to upload their entire manuscript, including tables and figures, as a single PDF file.**

All submissions to the Special Issue must be made electronically via online submission system Editorial Manager:

<http://www.editorialmanager.com/opencs/>

All manuscripts will undergo the standard peer-review process (single blind, at least two independent reviewers). **When entering your submission via online submission system please choose the option “*Special Issue on Advanced Aspects of Machine Learning Algorithms for Scientific Programming*”.**

Submission of a manuscript implies that the work described has not been published before and it is not under consideration for publication anywhere else.

The **deadline for submissions is April 24, 2023**, but individual papers will be reviewed and published online on an ongoing basis.

Contributors to the Special Issue will benefit from:

- Critical peer-review
- no space constraints
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We are looking forward to your submission!

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