

SPECIAL ISSUE on

Mathematics for Artificial intelligence and Artificial intelligence for Mathematics

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DESCRIPTION

This special issue in [Demonstratio Mathematica](#) focuses on Artificial Intelligence.

Artificial intelligence (AI) is the concept that machines are capable of imitating the thinking processes of human beings. Over the past decade, we have witnessed considerable advancements in AI and its applications in public life, science, and industry, despite its many ups and downs throughout its history. Mathematics, like other sciences, has been affected by AI, but the advances have not been as expected. Two of the most prominent mathematical fields that have benefited from the optimal combination of classical solvers and AI, particularly deep learning, are inverse problems and partial differential equations. The importance of using mathematics for advancement in AI should be addressed in addition to the use of AI to solve mathematical problems. In order for AI to be successful, mathematics is a critical component, and it should be noted that the basic mathematical understanding of AI is still very primitive. This weakness has prevented the application of AI in many fields or even resulted in its failure. The present special issue explores the latest mathematical developments in the field of artificial intelligence and the most recent effects of artificial intelligence on mathematics.

The topics of interest include – but are not limited to – the following:

- In-depth evaluation of the AI techniques
- AI-based model interpretation and validation
- AI application in inverse problems and partial differential equations
- AI-based optimization
- Emerging trends of deep learning in AI
- Application of AI in finance, cyber security, health, agriculture, transport, biological sciences, aerospace, etc.

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 on our [website](#) (Supplementary Materials).

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](#):

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 Mathematics for AI*".

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 October 2, 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
- quick online publication upon completing the publishing process (continuous publication model)
- better visibility due to Open Access – free, unrestricted and permanent access to all the content
- liberal policies on copyrights (authors retain copyrights) and on self-archiving (no embargo periods)
- promotion of published papers to readers and citers
- long-term preservation – content archiving with Portico

We are looking forward to your submission!

In case of any questions please contact [Editorial Office](#) (demonstratio.editorial@degruyter.com)