Special Issue

Making AI Materially Better: Mathematics for Contemporary AI Needs

Message from the Guest Editor

Artificial Intelligence (AI) has been recently undergoing a kind of renaissance. We can find AI across sectors in virtually every domain, e.g., chips, semi-, and autonomous vehicles, seamlessly in written and visual information as generative AI and dramatically improved deep learning as Kolmogorov-Arnold Networks (KAN). As both its presence and use become ubiquitous, a sobering observation becomes apparent: we still have no formal—mathematical—characterizations of AI that are as important as AI itself. We describe elements here —some are obvious, and some are not. Therefore, this Special Issue aims to seek compelling and timely mathematics partnered with contemporary AI algorithms and applications from all communities, which can fill in the missing elements of AI that will allow its use and impact to reflect our expectations. The submitted work must be original and unpublished, addressing contemporary AI needs. Any code and data must be made available to readers. We use AI in the broadest sense—to include machine learning.

Guest Editor

Prof. Dr. Mehmet M. Dalkilic

Computer Science Department, Indiana University, Bloomington, IN 47408, USA

Deadline for manuscript submissions

31 December 2025

Σ

Mathematics

mdpi.com/journal/
mathematics

![MDPI logo]

About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, UK

Author Benefits

High Visibility:
indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

Journal Rank:
JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

Rapid Publication:
manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).