Special Issue

Mathematical Foundations in NLP: Applications and Challenges

Message from the Guest Editors

We invite you to contribute to our Special Issue, which is driven by advancements in Artificial Intelligence (AI) and mathematical theories, which are essential to understanding how systems learn, optimize, and predict. NLP is key to technologies like chatbots, machine translation, and sentiment analysis. The integration of AI has enabled the development of sophisticated models that tackle the complexity of human language. This Special Issue emphasizes the mathematical foundations underlying NLP and how they apply across fields. We aim to provide a platform for innovative research that deepens theoretical understanding while advancing practical applications. We welcome contributions on challenges and opportunities in machine learning, deep learning in NLP, and interdisciplinary approaches involving cognitive science, linguistics, and data science. Topics include mathematical models in machine learning, optimization algorithms, AI-driven text processing, large language models, machine translation, speech recognition, ethical AI, multilingual NLP, conversational AI, and question-answering systems.

We look forward to your submissions to advance this field.

Guest Editors

Dr. Jizheng Wan
School of Computer Science, University of Birmingham, Birmingham B15 2TT, UK

Dr. Mubashir Ali
School of Computer Science, University of Birmingham, Birmingham B15 2TT, UK

Deadline for manuscript submissions

31 December 2025

Σ

Mathematics

an Open Access Journal by MDPI

Impact Factor 2.2 CiteScore 4.6

mdpi.com/journal/ mathematics

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).