Special Issue

Using Artificial Neural Networks to Address Complex Problems

Message from the Guest Editors

This Special Issue, titled "Using Artificial Neural Networks to Address Complex Problems," aims to explore the intersection of mathematical sciences and ANN-based solutions for challenging problems across various fields. While ANNs have achieved remarkable success in applications such as natural language processing, image analysis, and generative modeling, many domains still present significant challenges due to the limited, imprecise, or costly nature of the data, especially in medicine, materials science, chemistry, and molecular engineering, among others. We particularly encourage submissions that emphasize the mathematical modeling, theoretical analysis, and methodological advancements underpinning the design, and application of ANNs. Contributions may include innovative architectures, training algorithms, interpretability techniques, or mathematical formulations that enable ANNs to perform effectively in complex and constrained environments. Original research articles and high-quality review papers are welcome. This Special Issue aims to promote interdisciplinary dialog and showcase how mathematics advances in neural network research and its applications.

Guest Editors

Prof. Dr. Roberto Alejo Eleuterio

Prof. Dr. Vicente García

Dr. Everardo Efrén Granda-Gutiérrez

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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

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