Special Issue

AI-Based Data Science and Database Systems

Message from the Guest Editors

As machine learning (ML), deep learning (DL), and large language models (LLMs) become widely adopted across various applications and disciplines, the synergy between database (DB) systems and the artificial intelligence (AI) community is becoming increasingly evident. AI technology, with its unparalleled modeling and generalization capabilities, catalyzes further development in numerous fields. Beyond the contributions of algorithms and models themselves, the quality of training data significantly impacts the performance of AI models. The steps involved in data preparation, cleaning, and management, which greatly influence data quality, are closely linked to research within the database community. Additionally, the ML pipeline also depends on mechanisms for storing and querying ML artifacts. Conversely, the database field can also benefit from AI research. Traditional methods in the database domain, which often rely on constraint- or rule-based approaches, can leverage AI to reduce the heavy dependence on human supervision and offer new perspectives and solutions for addressing traditional complex problems.

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Deadline for manuscript submissions

20 January 2026

MDPI

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/journal/applsci

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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