

Special Issue

Combination and Application of Computational Logic and Artificial Intelligence

Message from the Guest Editor

Computational logic has long served as a foundational pillar in the development of artificial intelligence by offering formal languages and reasoning mechanisms for representing (semantic) knowledge, drawing inferences, and modeling intelligent behavior. Logical frameworks such as first-order logic, description logics, and non-monotonic logics enable AI systems to perform deductive reasoning, handle incomplete or uncertain information, and ensure consistency in decision-making processes. In the broader landscape of AI, which is predominantly driven by statistical learning, computational logic remains essential for ensuring transparency, verifiability, and interpretability. The interplay between symbolic reasoning and statistical methods is paving the way for hybrid AI systems that combine the strengths of both paradigms—leading to systems that are not only accurate but also capable of justifying their conclusions. This special issue explores the integration of computational logic and artificial intelligence, aiming to highlight how their combination enhances intelligent systems across multiple domains.

Guest Editor

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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.

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