



*algorithms*

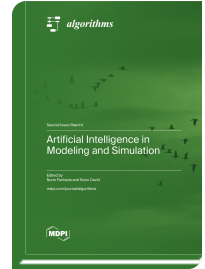


*Special Issue Reprint*

## Artificial Intelligence in Modeling and Simulation

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The Special Issue on "Artificial Intelligence in Modeling and Simulation" presents a collection of papers demonstrating the significant impact of artificial intelligence (AI) on various aspects of modeling and simulation (M&S). This reprint features 11 selected papers that focus on integrating AI techniques to improve simulation models' accuracy, efficiency, and applicability across different domains. This Special Issue includes research on using AI for optimizing simulation processes, such as reducing computation times and increasing predictive accuracy in complex systems. For instance, one study investigates the impact of different activation functions on the performance of neural networks in finite element simulations, while another reviews the application of AI in time series prediction. Furthermore, the issue covers the role of AI in real-time data processing and classification, showcasing methods to improve the detection and evaluation of data in operational technologies and structural health monitoring. The interaction between AI and agent-based modeling is also addressed, demonstrating how automated data extraction and model validation can significantly advance the development and application of agent-based models. This Special Issue provides valuable insights and methodologies for researchers and practitioners, highlighting the broad range of applications and significant advancements driven by AI in M&S.



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