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Call-for-Papers

Special Issue

High-order Models and Algorithms in Artificial Intelligence

• **Aims and Scope:**

Artificial intelligence (AI) has seen remarkable advancements in recent years, with high-order models playing a significant role in pushing the boundaries of AI capabilities. High-order models capture complex, non-linear relationships and interactions between variables, which is essential for tackling complex real-world problems that involve multifaceted data patterns. They also have the ability to automatically learn hierarchical representations from the data and better handle sequential and temporal data. By high-order models, researchers are developing methodologies to understand how these models make predictions, providing insights into the decision-making process. Therefore, high-order models and algorithms have revolutionized the field of AI.

Acknowledging the importance of high-order models and algorithms for AI, the theme of this special issue in *Journal of the Operations Research Society of China* is High-order Models and Algorithms in Artificial Intelligence. The special issue is seeking high quality contributions on the high-order models, methodologies and applications in AI, and related fields. In particular, the topics to be covered include but are not limited to:

1. Deep neural networks with high-order connections
2. Graph/hypergraph neural networks
3. High-order optimization algorithms for training complex models
4. Hierarchical and multi-level modeling approaches in AI
5. Interpretability and explainability of high-order models
6. Novel architectures and algorithms for high-order models
7. Real world applications of high-order AI models

• **Important dates:**

Manuscript Due	December 31, 2024
First Round of Reviews	March 31, 2025
Publication Date	August 2025

• **Guest Editors:**

Shi-Hui Ying, Shanghai Institute of Applied Mathematics and Mechanics, Shanghai University, China
Zheng-Wang Wu, University of North Carolina at Chapel Hill, USA
Shao-Yi Du, School of Artificial Intelligence, Xi'an Jiaotong University, China
Yan-Qin Bai, Department of Mathematics, Shanghai University, China

• **Submission of Manuscripts:**

https://www2.cloud.editorialmanager.com/jorc/, selecting the section S.I.: High-Order Models and Agorithms in AI - Prof.Ying (Shi-Hui)
More inforamtion about the journal: https://link.springer.com/journal/40305

Submissions should be original work with scientific contributions, and can neither have been published nor be under concurrent review of another journal or conference. Before submission, authors should carefully read over the journal's "Instructions for Authors". The review process will follow the journal's practice.