Special Issue

Symmetry and Asymmetry in Natural Language Processing

Message from the Guest Editors

Natural Language Processing (NLP), as a significant branch of artificial intelligence, is dedicated to enabling computers to understand, generate, and interact with human language. In recent years, NLP has experienced rapid development. Typical NLP tasks include dialogue systems, machine translation, text summarization, information extraction, and topic classification, among others. In these tasks, data and models often exhibit characteristics of symmetry and asymmetry. For example, machine translation generally requires semantic symmetry between the source and target languages, ensuring consistent meaning transmission across different languages. However, it exhibits textual asymmetry due to differences in grammatical structures and expressive methods between languages. Similarly, in text entailment tasks, Siamese network structures typically achieve better performance. Therefore, this Special Issue aims to introduce new methods, frameworks, and theories for addressing NLP tasks, data, and models with symmetric and asymmetric characteristics in the context of the era of LLMs.

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Deadline for manuscript submissions

28 February 2026

About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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