

Special Issue

Artificial Intelligence Research for Complex Biological Systems (2nd Edition)

Message from the Guest Editors

This Special Issue is the second edition of the successful issue, *Artificial Intelligence Research for Complex Biological Systems*. Advances in artificial intelligence and intelligent computing have transformed research in bioinformatics, computational systems biology, and modern genomics, providing powerful tools to investigate complex biological systems. AI-driven approaches have been widely applied to analyze single-cell and bulk omics data, uncover disease mechanisms, model biological processes, and optimize complex systems. In particular, single-cell omics data present significant computational challenges due to their high dimensionality, large scale, and inherent noise, making AI-based methods essential for effective analysis. Emerging generative AI technologies are also expected to establish foundational computational frameworks that will accelerate biological and biomedical research. This Special Issue welcomes original research and reviews highlighting innovative AI methodologies, data-driven studies, and computational advances that contribute to a deeper understanding of complex biological systems.

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A major strength of biological science is the diversity of approaches that biological scientists apply to their research problems. *Biology* reflects this diversity and brings together studies employing the varied experimental and theoretical approaches that are fueling biological discovery. *Biology*, the journal, is a fully peer-reviewed publication with a rapid and economical route to open access publication and is listed on PubMed. All articles are peer-reviewed and the editorial focus is on determining that the work is scientifically sound rather than trying to predict its future impact.

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