Special Issue

Hypothesis-Driven Artificial Intelligence Approaches for Complex Systems Biology

Message from the Guest Editors

This Special Issue focuses on approaches that attempt to recapitulate information extracted from data with AI tools into general frameworks that advance biological knowledge according to a hypothesis-driven methodology with the goal of overcoming mere statistical correlations. Theoretical frameworks and modelling paradigms of non-linear systems theory, complex systems science and dynamical systems theory, with their rich repertoire of tools, concepts and methods, can be a valuable source of inspiration. From the point of view of AI, all AI techniques and subfields are welcome as long as they are included in works that recapitulate the results in theory-based or model-based approaches. The non-exhaustive lists of potential contributions we are interested in will focus on approaches that integrate AI techniques with the following:

- Applications of dynamical systems theory to biological processes;
- Modelling approaches that exploit biological principles to reproduce observed data patterns;
- Parameters tuning and optimisation of mathematical models for biological and biochemical systems;
- Computational systems biology methodologies, etc.

Guest Editors

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Deadline for manuscript submissions

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About the Journal

Message from the Editor-in-Chief

Systems is a leading venue for the quick and global dissemination of results of cutting-edge research in various areas of systems science and systems-related fields. An increasing number of researchers are realizing the enormous potential of systems thinking in managing the many unprecedented and complex issues in all areas of need. The *Systems* journal provides a home of exceptional quality for the manuscripts of these researchers who often find it difficult to publish their work in conventional discipline focused journals.

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