

## Special Issue

# Complexity, Entropy and the Physics of Information II

### Message from the Guest Editors

With the rapid development of artificial intelligence (AI) techniques, complexity and entropy play important roles, often influencing the design, performance, and understanding of AI systems. Complexity is crucial for developing models that generalize well to unseen data. Entropy, as a measure of uncertainty, helps in understanding and quantifying the reliability of AI predictions. Balancing complexity and entropy is an ongoing challenge, and various techniques and methodologies are employed to strike an optimal balance for effective and reliable AI systems. This Special Issue focuses on recent advances in the theories and methods in complexity science and statistical physics and their applications in understanding and analyzing information and AI systems in various scientific disciplines encompassing computer science, physics, biomedicine, management, economics, and more. **Keywords:** information systems; neural networks; information theory; complexity theory; statistical physics; complex networks; complexity and entropy in AI; data-driven modelling; machine learning and deep learning; time-series analysis

---

### Guest Editors

Prof. Dr. Yi-Cheng Zhang

Department of Physics, University of Fribourg, CH-1700 Fribourg, Switzerland

Dr. Shimin Cai

School of Computer Science and Engineering, University of Electronic Science and Technology of China, Chengdu 610054, China

---

### Deadline for manuscript submissions

28 February 2025



## Entropy

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.1  
CiteScore 4.9  
Indexed in PubMed



[mdpi.com/si/190371](https://mdpi.com/si/190371)

*Entropy*

MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[entropy@mdpi.com](mailto:entropy@mdpi.com)

[mdpi.com/journal/  
entropy](https://mdpi.com/journal/entropy)





# Entropy

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.1  
CiteScore 4.9  
Indexed in PubMed



[mdpi.com/journal/  
entropy](https://mdpi.com/journal/entropy)



## About the Journal

### Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

*Entropy* is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

---

### Editor-in-Chief

Prof. Dr. Kevin H. Knuth

Department of Physics, University at Albany, 1400 Washington Avenue,  
Albany, NY 12222, USA

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, PubMed, PMC, Astrophysics Data System, and other databases.

#### Journal Rank:

JCR - Q2 (Physics, Multidisciplinary) / CiteScore - Q1 (Mathematical Physics)