# **Special Issue**

# Application of Entropy to Computer Vision and Medical Imaging

# Message from the Guest Editors

Shannon entropy is initially devoted to quantifying the minimum bits necessary to encode a signal without loss of information; it represents the asymptotic limit of the compression ratio in the Huffman algorithm. Moreover, Shannon entropy is linked to the amount of disorder in random signals. Since Shannon's work, generalizations of entropy (Rényie, Havrda-Charvat) as well as various applications have emerged. In statistics, as well as in machine learning, different entropies have been used to model uncertainty in data and in parameter estimation and can be also used to evaluate the amount of information in data. From entropies, one can define divergences which are used as "distances" between probability distributions. In deep learning, these entropies are usually used as loss functions for probabilistic neural networks. This Special Issue is devoted to applications of probabilistic neural networks for computer vision and medical image analysis.

# **Guest Editors**

Dr. Su Ruan Department of Medicine, University of Rouen Normandy, 76130 Mont-Saint-Aignan, France

#### Dr. Jérôme Lapuyade-Lahorgue

Department of Medicine, University of Rouen Normandy, 76130 Mont-Saint-Aignan, France

# Deadline for manuscript submissions

closed (15 July 2023)



an Open Access Journal by MDPI

Impact Factor 2.0 CiteScore 5.2 Indexed in PubMed



mdpi.com/si/89995

Entropy Editorial Office MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 entropy@mdpi.com

mdpi.com/journal/

entropy





an Open Access Journal by MDPI

Impact Factor 2.0 CiteScore 5.2 Indexed in PubMed



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)