Information Theory in Neural Coding and Decoding

Guest Editor:

Dr. Ivilin Peev Stoianov

Institute of Cognitive Science and Technologies (ISTC), National Research Council (CNR) of Italy, Via Martiri della Libertà 2, 35137 Padova, Italy

Message from the Guest Editor

The hypothesis that the brain performs Bayesian inferential predictive processing to perceive the environment and conduct motor control by minimizing prediction errors is gaining an increasing popularity. In this view, perception continuously adds incoming sensory evidence to improve its estimate of the latent states of the world, reducing state-prediction errors. In turn, actions minimize prediction errors at the proprioceptive and at the external sensory level and further reduce latent-state uncertainty through exploration. This principle view about neural processing is embraced in several theories about perception and action - such as Predictive Coding and Active Inference - and makes strong predictions about the type of information content in the brain and its localization.

Special Issue

Editor-in-Chief

Prof. Dr. Kevin H. Knuth
Department of Physics, University at Albany, 1400 Washington Avenue, Albany, NY 12222, USA

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.

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)

Contact Us