Special Issue

Semantic Information Theory

Message from the Guest Editors

Information theory laid the foundation for modern communication systems, focusing primarily on the syntactic aspects of data transmission without considering the semantic meaning. Semantic communication, in contrast, concentrates on the semantic or effectiveness levels and aims to extract and convey the information to accomplish a downstream task. Due to its exceptional advantages in communication efficiency and compatibility with emerging AI applications, semantic communication has garnered significant attention. However, a unified theoretical foundation and operational analytical tools for semantic communications remain elusive. The relationship between traditional information theory and semantic communications is not yet established. Specifically, the extent to which information theory can address challenges in semantic communication is yet to be explored. This Special Issue aims to bridge this gap by fostering the convergence of information theory and semantic communications.

Guest Editors

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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.

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