Information Theory in Signal Processing and Image Processing

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Message from the Guest Editors

Longstanding interplays exist between information theory, signal processing, and image processing. Recently, such interplays have been significantly intense due to the huge advances in learning and optimization methods, such as deep learning, reinforcement learning, convex and non-convex optimization, and distributed optimization and learning. Accordingly, information-theoretic learning and optimization have led to significant and positive advances in signal and image processing owing to the large amount of available data acquired by advanced sensing devices and social media platforms. Although many efficient learning-based algorithms have been developed for complex problems in signal and image processing, there is a lack of theoretical foundations concerning how to exploit and evaluate the fundamental performance limits of these algorithms. Special Issue seeks to encourage new information-theoretic topics in the areas of signal processing, image processing and recognition, inference, and machine learning. More importantly, it will promote fundamental synergies across these areas of research.

Special Issue

Editor-in-Chief

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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.

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