Information Theory in Deep Learning and Signal Processing for Biomedical Signal Analysis

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Message from the Guest Editors

Entropy, and information theory in general, has been applied many times to the analysis of biomedical signals, since randomness and complexity are often crucial characteristics in the functioning of the human body. In this context, the recent developments of machine-learning methods, information theoretical learning, and deep neural networks, in particular, have drawn the attention of researchers in the field biomedical signal processing.

We believe that the combination of information theory and machine learning can make a decisive contribution to biomedical signal analysis at the feature engineering level, in the determination of significant features for classification; at the learning algorithm level, in the definition of information-theoretical-based learning algorithms; and at the postprocessing level, in the interpretation of the physiological phenomena that generated the processed signals.

This Special Issue aims to attract significant contributions in this context, with the aim of highlighting the potential of the combination of information theory and machine learning in the field of biomedical signal analysis.

Special Issue

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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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