Information Theoretic Learning and Kernel Methods

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Message from the Guest Editors

Dear Colleagues,

Information theoretic learning (ITL) was originally derived for supervised learning applications. The idea is that the error distribution in supervised learning is often non-Gaussian, therefore traditional mean square error (MSE) is not the optimal criterion to use, and in such case the information theoretic descriptors such as entropy can provide better nonlinear models in a range of problems from system identification to classification. On the other hand, kernel methods are powerful tool for nonlinear systems modeling in machine learning community. ITL and kernel methods are efficient approaches for learning a nonlinear mapping in non-Gaussian environments. In this Special Issue, we seek contributions that apply either information theoretic descriptors or kernel methods to deal with various machine learning problems. The scope of the contributions will be very broad, including theoretical studies and practical applications to regression, classification, system identification, deep learning, unsupervised learning and reinforcement learning and so on.

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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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