Information-Theoretical Methods in Data Mining

Guest Editor:

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Message from the Guest Editor

Data mining is a rapidly growing field with the aim of analyzing big data in academia and industry. In it information-theoretical methods play a key role in discovering useful knowledge from a large amount of data. For example, probabilistic modeling of data sources based on information-theoretical methods such as maximum entropy, the minimum description length principle, rate-distortion theory, Kolmogorov complexity, etc. have turned to be very effective in machine learning problems in data mining such as model selection, regression, clustering, classification, structural/relational learning, association/causality analysis, transfer learning, change/anomaly detection, stream data mining, sparse modeling, etc.

This special issue specifically emphasizes research that addresses data mining problems using information-theoretical methods. It includes research on a novel development of information-theoretical methods for specific applications to data mining, and a new data mining problem using information theory. Submissions at the boundaries of information theory, data mining, and other related areas such as machine learning, network science, etc. are also welcome.

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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