Bayesian Inference in Probabilistic Graphical Models

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Message from the Guest Editors

Probabilistic graphical models (PGMs) have become a popular statistical modelling tool with remarkable impact on disciplines like data mining and machine learning, because their most outstanding features are their clear semantics and interpretability. Bayesian inference methods naturally embed into PGMs, providing them with efficient and sound techniques for estimating both structure and parameters. Bayesian inference has been the key to the application of PGMs in specially demanding domains like streaming data analysis, where the models need to be frequently updated when new data arrives. Papers covering relevant modelling issues are also welcome, including papers dealing with data stream modelling, Bayesian change point detection, feature selection and automatic relevance determination. Even though entirely theoretical papers are within the scope of this Special Issue, contributions including a thorough experimental analysis of the methodological advances are particularly welcome, so that the impact of the proposed methods can be appropriately determined in terms of performance over benchmark datasets.

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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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