Special Issue

Bayesian Network and Signal Processing

Message from the Guest Editor

While Bayesian networks offer principled frameworks for uncertainty quantification, their application to nonstationary, large-scale signal processing tasks remains nontrivial. Key challenges include: Dynamic architectural learning; Computational scalability; Integration with deep learning; Uncertainty-aware optimization. This Special Issue invites original research addressing these challenges through theoretical advancements and practical implementations. Topics of interest include, but are not limited to, the following:

- Advanced inference algorithms: Local Gibbs sampling, stochastic gradient MCMC, and distributed variational methods for large-scale networks.
- Dynamic network architectures: Switching models for time-varying systems in speech processing, biomedical engineering, and financial signal analysis.
- Cross-domain integration: Bayesian tensor decomposition, quantum-inspired networks, and blockchain-secured distributed inference frameworks.
- Real-world applications: Case studies in acoustic echo cancelation, environmentally robust speech recognition, and multi-omics data fusion.

Guest Editor

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Deadline for manuscript submissions

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About the Journal

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.
Entropy is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

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