



Information Theory in Multi-Agent Systems: Methods and Applications

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Message from the Guest Editor

In recent years, research on the topic of the intelligent control and autonomous decision making of Multi-Agent System (MAS) has made a splash in the real-world in the form of autonomous driving, multi-robot collaboration, and MOBA games. Despite the great success of these emerging techniques in many AI tasks, they still suffer from several limitations.

Innovative approaches such as unsupervised reinforcement learning (URL) have brought about a breakthrough. In this area, the contribution of Information Theory could be highly impactful. How to deal with the mutual information objectives, state entropy, and uncertainty evaluations involved in intelligent methods are essential but difficult issues to be addressed. New emergent machine learning technologies (e.g., unsupervised reinforcement learning), information theory (e.g., maximize mutual information), variational approximation, entropy estimators, and so forth will offer us new solutions.

This Special Issue welcomes the submission of new perspectives, theories, algorithms, and applications of multi-agent systems involving information theory on the central issues of efficiency, generalization, robustness, and interpretability.





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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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