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Information Theory at the Crossroads of Artificial Intelligence, Human Cognition, and Economics

Guest Editor:

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Deadline for manuscript submissions:
closed (31 January 2021)

Message from the Guest Editor

Dear Colleagues,

Information theory is a versatile tool for studying the overlap between theories of economic decisions and theories of AI and human cognition. In AI, this can be seen in the appearance of neural networks, machine learning, and pattern recognition alongside discussions of gambling, optimal portfolio selection, and financial markets in the key texts on information theory. Consequently, information theory can help explore prescriptive questions about decisions.

Alternatively, approaches in computer science, neuroscience, and psychology have viewed the cognitive sciences as a study of constrained information processing. For example, information theory has played an important role in models that relate perception to action via neural structures.

This Special Issue invites submissions of original research articles and reviews that explore the role of information theory in economics and:

agent-based modeling; psychology and neuroscience; artificial intelligence; reinforcement learning; agent-to-agent interactions; network theory; game theory; game theory of mind; the basis of rational decisions; human versus algorithmic rationality; and emergent market complexity.

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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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