Advances in Integrated Information Theory

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Message from the Collection Editors

Integrated information theory (IIT) addresses the problem of consciousness and its physical substrate, providing a quantitative framework to analyze the compositional causal structure of (discrete) dynamical systems. In particular, IIT's formalism is based on a notion of information that is physical and intrinsic (observer-independent) and a set of causal principles ("postulates"), including causal composition, specificity ("information"), irreducibility ("integration"), and definiteness ("exclusion").

For this Topical Collection, we invite contributions that apply, discuss, compare, or extend the theoretical framework of IIT. We also welcome submissions proposing approximations, practical measures, new applications, or alternative formulations of (parts of) the IIT formalism.

TopicalCollection

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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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