

Special Issue

Information Theory and AI-Driven Communications

Message from the Guest Editors

Whilst information theory (IT)-driven communications have led the evolution of mobile communication systems in the past decades, artificial intelligence (AI)-driven approaches have been demonstrating great potentials in bolstering the future (r)evolutions. However, there is still a lack of theoretical understanding to underpin such a revolutionary thread of integrated IT-/AI-driven communications. This special issue aims to present cutting-edge research of 1) transformations of IT-driven communication frameworks and algorithms to AI-driven architectures and models using e.g., learning-to-code, learning-to-optimize, learning-to-unfold approaches; and 2) theoretical foundations of AI-driven models and algorithms for communications with respect to generalization, robustness, explanation, security and privacy from information and learning theoretical perspectives. In particular, we welcome contributions that investigate innovative model/data-driven deep learning approaches to digital/wireless communications and study theoretical guarantees of AI models/algorithms with respect to generalization, robustness, explainability, security and privacy.

Guest Editors

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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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Editor-in-Chief

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