Special Issue

Advanced Machine Learning Techniques for Sensing and Imaging Applications

Message from the Guest Editors

Recent advances in machine learning, from large-scale optimization to building deep neural networks, are increasingly being applied in the emerging field of computational sensing and imaging. A wide range of machine learning techniques, including deep learning, sparse and low-rank modeling, manifold learning, unrolled architectures, and convolutional and tensor models, can be applied to enhance the effectiveness and efficiency of various sensing and imaging systems. By exploiting the underlying image or signal models via a data-driven approach, these advanced machine learning techniques benefit applications from image reconstruction to analysis. The goal of this Special Issue is to present a collection of high-quality works containing original research on imaging- and sensing-related schemes, including novel imaging pipelines, smart sensing designs, blind compressed sensing, and task-driven imaging and understanding, in which machine learning is the major component. This Special Issue's scope ranges from sensing and learning theory to image and system modeling, algorithms, and applications in various imaging modalities.

Guest Editors

Dr. Bihan Wen
School of Electrical and Electronic Engineering (EEE), Nanyang Technological University (NTU), Singapore

Dr. Zhangyang (Atlas) Wang
Electrical and Computer Engineering, University of Texas at Austin, Austin, TX, USA

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Micromachines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
micromachines@mdpi.com

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