Topical Collection

Applications of Convolutional Neural Networks in Imaging and Sensing

Message from the Collection Editors

Convolutional Neural Networks are a class of deep neural networks that leverage spatial information, and are, therefore, well-suited to be applied to different tasks in image-processing and computer vision. Exploiting deep and end-to-end learnable architectures, CNNs allow to learn the best features or abstract representations to solve the particular problem at hand. This flexibility to adapt to different problems is among the reasons they now represent the state-of-the-art in many challenging image-processing and computer vision applications. Nonetheless, deep learning presents its own set of specific challenges: the need for large-cardinality training sets can make data labeling cumbersome and expensive, and the high computational complexity of neural models can be an obstacle to mobile embedding and user personalization. This Special Issue covers all the topics related to the application of CNNs to image processing and computer vision tasks, as well as topics related to the definition of new CNN architectures, highlighting their advantages in addressing the problems currently faced by the imaging community.

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Sensors

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Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro
Dipartimento di Ingegneria Elettrica e dell'Informazione (Department of Electrical and Information Engineering), Politecnico di Bari, Via Edoardo Orabona n. 4, 70125 Bari, Italy

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