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Mathematical Modeling of Signal Processing and Analysis in Light of Deep Learning

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Message from the Guest Editors

Deep neural networks are gaining widespread attention due to their ability to provide performance gains in several real-world problems, largely those related to image data. Mathematical theory of deep learning networks would illuminate their mechanisms, allow the assessment of the strengths and weaknesses of different network architectures and lead to major improvements. The future state of the art in the field, if efficient and effective deep learning algorithms are developed, could be represented by several types of advanced signal processing methods.

The aim of this Special Issue is to introduce readers to the emerging concept of mathematical modeling deep learning algorithms for signal processing and analysis. In the expanded technical scope of signal processing, the signal input is not limited to traditional signal types such as audio, speech, image and video, but extends to additional sensory data that convey high-level, semantic information. Overcoming model overfitting, data augmentation techniques for high-quality training data, prediction results and the interpretability of deep models are of special interest.

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Message from the Editor-in-Chief

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