

Call for Papers -- IEEE Journal of Selected Topics in Signal Processing

Deep Learning for Multi-modal Intelligence across Speech, Language, Vision, and Heterogeneous Signals

[Deadline Extended: September 15, 2019]

In the past years, thanks to the disruptive advances in deep learning, significant progress has been made in speech processing, language processing, computer vision, and applications across multiple modalities. Despite the superior empirical results, however, there remain important issues to be addressed. Both theoretical and empirical advancements are expected to drive further performance improvements, which in turn would generate new opportunities for in-depth studies of emerging novel learning and modeling methodologies. Moreover, many problems in artificial intelligence involve more than one modality, such as language, vision, speech and heterogeneous signals. Techniques developed for different modalities can often be successfully cross-fertilized. Therefore, it is of great interest to study multimodal modeling and learning approaches across more than one modality. The goal of this special issue is to bring together a diverse but complementary set of contributions on emerging deep learning methods for problems across multiple modalities.

Topics of interest in this special issue include (but are not limited to):

- Fundamental problems and methods for processing multi-modality data including language, speech, image, video, and heterogeneous signals.
- Pre-training, representation learning, multitask learning, low-shot learning, and reinforcement learning of multimodal problems across natural language, speech, image, and video.
- Deep learning methods and applications for cross-modalities, such as image captioning, visual question answering, visual story-telling, text-to-image synthesis, vision-language navigation, *etc.*
- Evaluation metrics of multimodal applications.

Important Dates

Submissions due: 15-Sept-2019

First review: 01-Nov-2019

Revised manuscript due: 15-Dec-2019

Second review: 1-Feb-2020

Final manuscripts due: 15-Mar-2020

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