

November 14 - 16, 2017, Montreal, Canada

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Symposium on Sparse Signal Processing and Deep Learning Call for Papers

General Chair:

Prof. Peter Chin, Boston University and Systems & Technology
Research, Boston, USA

Technical Co-Chairs:

Prof. Piya Pal, University of Maryland, College Park, USA
Prof. Seung-Jun Kim, Univ. of Maryland, Baltimore Co., USA
Prof. Trac D. Tran, Johns Hopkins University, Baltimore, USA

The Sparse Signal Processing and Deep Learning symposium will explore deep connection between sparsity of signals and deep learning theory, and will thus focus on novel signal processing ideas and results, both experimental and theoretical, in learning compact and meaningful signal representations, in efficient signal sampling and sensing, and in computational methods for high dimensional big data sets that pervade the current information age, and sparse implementation of deep networks using novel hardware technologies. Topics of interest include but are not limited to:

- Connections between sparse auto encoders and sparse representation
- Floating point operation optimization of deep networks
- Sparse coding, sparse representations, and dictionary learning.
- Sparse and low-rank approximation algorithms.
- Sparse sequence-to-sequence learning
- Learning on graphs
- Connections between learning rate and sampling rate
- Sparsity and super resolution.
- Recurrent neural networks for periodic and quasi-periodic signals
- Phase retrieval and bilinear problems.
- End-to-end deep-learning vision or speech recognition system.
- Advanced supervised and unsupervised deep-learning algorithms.
- Sparse explainable networks
- VLSI implementation of Tensor sketching and factorizations.
- Compressed Learning – compressive sensing for learning: new theory and methods.
- Dimensionality reduction, feature extraction, classification, detection, and source separation.
- Geometric Wavelet Theory
- Sparsity measures in approximation theory, information theory and statistics.
- Regularization theory with low-complexity / low-dimensional structures.
- Statistical models and algorithms for sparsity.
- Sparse network theory and analysis.
- Tree-to-Tree learning
- Deep-learning software and hardware architecture.
- Big data applications (e.g., neuroscience, biomedical imaging, array signal processing, genetics, optics and radar, feedback control, communication, computer vision, high-level scene/activity analysis, and social networks etc.)

Paper Submission: Prospective authors are invited to submit full-length papers (up to 4 pages for technical content including figures and possible references and with one additional optional 5th page containing only references) and extended abstracts (up to 2 pages, for paper-less industry presentations and Ongoing Work presentations) via the GlobalSIP 2017 conference website. Manuscripts should be original (not submitted/published anywhere else) and written in accordance with the standard IEEE double-column paper template. The accepted abstracts will not be indexed in IEEE Xplore, however the abstracts and/or the presentations will be included in the IEEE SPS SigPort. Accepted papers and abstracts will be scheduled in lecture and poster sessions.

Important Dates:

- ✦ **May 15, 2017:** Paper submission due
- ✦ **June 30, 2017:** Notification of Acceptance
- ✦ **July 22, 2017:** Camera-ready papers due

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