Symposium on signal processing and machine learning in large medical datasets
Call for Papers

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IEEE GlobalSIP 2017 Symposium on signal processing and machine learning in large medical datasets will focus on advances in signal processing and machine learning methods with applications involving large medical datasets acquired for clinical decision support. Today, a huge amount of medical data is being generated from different modalities including imaging modalities (e.g., magnetic resonance imaging, ultrasound) and other signal acquisition modalities for acquiring physiological signals. To make and support an accurate clinical decision, one typically needs a variety of signal processing and machine learning algorithms to pre-process and classify such data. This symposium is aimed at addressing these two broad issues.

Topics of interest include but are not limited to:

- Big data approaches to physiological datasets
- Machine learning algorithms for data mining patient charts
- Multimodal neuroimaging data analysis and fusion
- Dynamic and non-linear time-series analysis
- Statistical inference, dictionary learning, sparse recovery, blind source separation methods applied to large medical datasets
- Advanced machine learning approaches to brain data analysis including network building, parcellation, and brain state decoding
- Statistical machine learning

- Medical data analysis using signal processing on graphs
- Distributed signal processing on networks/graphs in medical data
- Structured data recovery, e.g., sparse + low-rank matrix factorization, robust PCA, compressive sensing, structured sparsity
- Higher order data analysis, e.g. tensor-based approaches to medical data analysis
- Functional/effective connectivity of evolving networks in medical imaging data
- Anatomical imaging and structural connectivity

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) or 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. Accepted full-length papers will be indexed on IEEE Xplore. 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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