CALL FOR PAPERS
IEEE Transactions on Multimedia
Special Issue on Multimodal Biomedical Imaging

Important Dates:

> Paper submission due: April 16, 2012
> First-round acceptance notification: July 1, 2012
> Revision Due: August15, 2012
> Second-round review completed: November 1, 2012
> Final manuscript due: January 3, 2013
> Publication date: April 2013 (expected)

URL:
http://www.signalprocessingsociety.org/tmm/tmm-special-issues/

To submit your paper:
http://mc.manuscriptcentral.com/tmm-ieee

Summary:

Analysis of multi-modality data is inherent to many problems in science and engineering including biomedical image analysis. Technologies for imaging are individually expensive, thus ways to synergistically derive information from complementary modalities have the potential to substantially enhance our understanding of underlying biological and medical processes. For example, a more precise, spatio-temporal study of human brain function could incorporate direct integration of both EEG and fMRI signals. Combining higher-resolution imaging modalities such as MRI and X-ray with low-resolution diffuse optical imaging could improve the optical reconstruction. The field of multimodal biomedical imaging developed rapidly during the last decade and the surge of activity within the last decade is a simple proof of the exciting insights offered through the analysis of multimodal biomedical imaging data. Due to the increasing complexity, volume and modeling challenge of increasingly available multimodal biomedical imaging data, there is critical need for new, advanced multimedia signal processing, modeling and computational methods for fast, accurate and cost-effective analysis of multimodal biomedical data, to obtain comprehensive information about the underlying biomedical event and for faster acceptance of novel imaging modalities in real-world applications.

The goal of this special issue is to bring together the imaging and media analysis communities to provide a diverse, but complementary, set of contributions to demonstrate the importance of multimedia signal processing and machine learning in the multimodal biomedical imaging area. Contributions will provide insight into current advances in the wide field of multimodal biomedical imaging with respect to concepts, data acquisition, data analysis and fusion, and medical validation and applications. We invite original and unpublished research contributions in the areas relevant to intermodal and intramodal multimodal biomedical imaging for the improved analysis and interpretation of data.

Scope:

The topics of interest include, but are not limited to:

- Multimodal imaging techniques: data acquisition, reconstruction; 2D, 3D, 4D imaging, simultaneous imaging (*e.g.,* simultaneous EEG-fMRI, simultaneous NIRS-EEG, multimodality optical imaging)
- Hardware/software co-design (*e.g.,* compressed sensing based acquisition)
- Preprocessing, denoising, artifact removal and compression
- Feature extraction and representation
- Bio-image processing (*e.g.,* visualization, segmentation, registration)
- Multimodal signal processing and data fusion
- Multivariate methods and array analysis
- Statistical inference (*e.g.,* robust and non-parametric inference, Bayesian inference)
- Multi-subject analysis, group analysis
- Human computer interaction (*e.g.,* fMRI-assisted BCI, BCI for virtual environments)
- Translational multimodality imaging and biomedical applications (*e.g.,* detection, diagnostic analysis, quantitative measurements, image guidance of ultrasonography)

Submission Procedure:

Prospective authors should submit original manuscripts that have not appeared, nor are under consideration, in any other journal. Prospective authors are required to follow the Author's Guide for manuscript submission to the IEEE Transactions on Multimedia (TMM) at http://www.signalprocessingsociety.org/tmm/tmm-author-info/, and manuscripts should be submitted electronically through the online IEEE manuscript submission system at http://mc.manuscriptcentral.com/tmm-ieee. We encourage the submission of supplementary materials in support of a manuscript, as well their availability to the TMM audience if the manuscript is accepted (*e.g.,* by providing a link to the related website where the software, code and/or databases are physically located).

Organization:

The manuscripts will be peer reviewed according to the standard IEEE process. Special invited papers will be reviewed by the guest editors and expect to account for about 30% of the papers in the special issue.

Guest Editors:

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