



Special Issue on **Recent Advances in Statistical Data and Signal Analysis: Application to Real World Diagnostics from Medical and Biological Signals**

CALL FOR PAPERS

Medical and biological signals span almost the entire spectrum from EEG to X-rays and their sources range from molecular scales to large organs such as heart, brain, and muscles. Signal processing techniques (including image analysis) are constantly serving towards improving the state of the art in medical and biological data analysis and interpretation. Computational approaches that have been hugely popular and found important applications include computational modelling, Bayesian and graphical models, machine learning, deep-learning, pattern recognition, optimization, spectral and pseudospectral analysis, stochastic modelling, iterative system model adaptation, and multiscale multiphysics analysis to name a few. This special issue focuses on recent advances in statistical techniques applied to medical and biological signals for disease detection and diagnosis. Some relevant focus areas are inflammatory bowel disease (IBDs), lesion detection in the human vasculature system using image or signal analysis, brain tumor detection, and schizophrenia detection using fMRI or EEG. We encourage contributions from authors working on real world medical and biological problems that require different signal processing techniques. We invite authors to contribute papers on interdisciplinary work overlapping electrical or computer engineering and biology, medicine, or other related disciplines.

Potential topics include, but are not limited to:

- ▶ Biological/medical image and signal processing in MRI, EEG, fMRI, CT, and ultrasound
- ▶ Bayesian approaches and graphical models
- ▶ Sensor and probe's signal analysis
- ▶ Imaging and microscopy techniques
- ▶ Medical informatics
- ▶ Human brain mapping
- ▶ Modelling and simulation of biological, biochemical, cellular, and subcellular processes
- ▶ Sensor fusion
- ▶ Large scale data analysis
- ▶ Machine learning and computational intelligence
- ▶ Optimization problems in biomedicine
- ▶ Pattern recognition techniques in biomedicine
- ▶ Wearable devices based health informatics
- ▶ Brain computer interface in medicine

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/cmmm/rassa/>.

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