International Journal of Biomedical Imaging

Hindawi

Special Issue on

Computer-Aided Imaging Diagnosis of Neurological and Neurosurgical Conditions

CALL FOR PAPERS

Medical diagnosis is the process of determining which disease a patient has using clinical assessment, laboratory testing, and medical imaging. Neurological diseases and injuries account for a major proportion of quality-adjusted life year loss worldwide. Diagnosis of these conditions relies heavily on medical imaging. However, it requires years of training for a human expert to interpret these images. Rapid advancement of computer hardware and software in recent years allows computer algorithms to work along with medical professionals to improve the accuracy and efficiency of the diagnostic process. To achieve this goal, various techniques including but not limited to image processing, computer vision, and machine learning have been employed to deliver quantitative and qualitative results.

The subject of this special issue relates to computer-aided diagnosis of neurological and neurosurgical conditions using magnetic resonance imaging (MRI), computed tomography (CT), and plain radiographic images of brain, spine, and other components of human nervous system. Invited and unsolicited review articles are welcome. The authors can use publicly available or their own image databases. For the latter, settings of the radiological equipment should be provided. Approaches can be knowledge-driven, data-driven, or combined. Pertinent clinical parameters can also be included. Studies evaluating treatment effects are welcome. The scope of this special issue will be of interest to neuroradiologists and biomedical engineers as well as neurologists, neurosurgeons and computer scientists, and graduate students wishing to expand their knowledge related to application of computer algorithms used in assisting medical diagnosis.

Potential topics include but are not limited to the following:

- Computer-aided imaging diagnosis of neurological diseases
- Computer-aided imaging diagnosis of cranial and spinal trauma
- Computer-aided assessment of intracranial hypertension and brain compression on medical images
- Computer-aided assessment of spinal cord compression on medical images
- Computer-aided assessment of postsurgical or posttreatment medical images
- Advanced clinical and imaging database development and management

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/ijbi/caid/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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