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International Journal of Biomedical Imaging

Special Issue on

Deep Learning in Biomedical Data Analysis

CALL FOR PAPERS

Automatic or semiautomatic interpretation of medical data is becoming more necessary as the load on medical personnel is growing by day. This increased load is partly due to the advent of more advanced and varied medical data acquisition devices that are generating rapidly increasing amounts of data per patient and partly owing to the increase in the number of patients per clinician. As a result, medical decisions, from screening and diagnosis to treatment, have to be made faster and to exploit knowledge from multiple sources. In such a challenging environment, automatic or semiautomatic interpretation and analysis of medical data, especially imagery data, can help improve the medical workflow, assist decision making, identify patients at risk, and provide insights in disease processes to guide drug development.

Recently, approaches using deep learning have achieved successes in the analysis of imagery data. Deep learning has tremendous potential to help in the medical domain where analysis and interpretation of data with such methods can free up clinicians' invaluable time so that they can focus on more important aspects of the case at hand. There are challenges that are unique to the medical domain, such as limited availability of large datasets, annotations that are expensive and require medical experts, anatomical variations between subjects, minute differences between the healthy and the early stage of a pathological case, and huge changes in image quality from one medical device to another. In this special issue, we invite papers that apply deep learning techniques to analyze medical data to tackle various parts of this challenging domain.

Potential topics include, but are not limited to:

- ▶ Novel applications of deep learning in medical image analysis
- ▶ Deep learning methods for identification and segmentation of interesting objects
- ▶ Deep learning from limited amounts of medical data
- ▶ Feature extraction with deep learning
- ▶ Computer-aided detection and diagnosis with deep learning
- ▶ Integration of multimodal data, such as X-ray, CT, MRI, ultrasound, text, and speech

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

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