Hindawi

Special Issue on

Scalable Machine Learning Algorithms in Computational Biology and Biomedicine 2020 (SDM20-2738)

CALL FOR PAPERS

Since the 'Precision Medicine' initiative was launched by President Obama, a huge challenge and chance for the computational biology and biomedicine community has been presented. In recent years, computational methods appeared vastly in biomedicine and bioinformatics research, including medical image analysis, healthcare informatics, cancer genomics, etc. Lots of prediction and mining works were required on the medical data, such as tumor images, electronic medical records, micro-array, GWAS (Genome-Wide Association Study) data. Therefore, a growing number of machine learning algorithms were employed in the prediction tasks of computational biology and biomedicine.

Advanced machine learning techniques have also developed quickly in recent years. Several impacted new methods were reported in top journals and conferences. For example, affinity propagation was published in Science as a novel clustering algorithm. Recently, deep learning seems to be suitable for big data and become to be the next hot topic. Parallel mechanism is also developed by the scholars and industry researchers, such as Mahout. A growing number of computer scientists devote to the advanced large-scale data mining techniques. However, the application in biomedicine has not fully been addressed and fell behind the technique growth.

This Special Issue aims to target the recent large-scale machine learning techniques together with biomedicine applications. Applications in medical and biological scalable data are encouraged. We especially encourage clinical or specific diseases genomics research with computational methods. We also welcome novel classification and clustering algorithms, such as strategies for large imbalanced learning, strategies for multiple views, learning, strategies for various semi-supervised learning, strategies for multiple kernels learning, etc. Both original research and review articles are welcomed.

Potential topics include but are not limited to the following:

- ▶ Novel computational strategies for clinical or specific diseases research
- ▶ Large scale classification algorithms with application to biomedicine or bioinformatics
- ▶ Large scale clustering algorithms with application to biomedicine or bioinformatics
- ▶ Imbalanced learning algorithms for biomedical or bioinformatics data
- ▶ Multiple views learning from medical image classification
- ▶ Semi-supervised learning strategies for biomedical or bioinformatics data
- ▶ Ensemble learning strategies for biomedical or bioinformatics data
- ▶ Parallel learning techniques for ultra large biomedical or bioinformatics data
- ▶ Multiple kernels learning with application to biomedicine or bioinformatics
- ▶ Multiple labels classification algorithms with application to biomedicine or bioinformatics

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.wiley.com/submit?specialIssue=484491.

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

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Submission Deadline
Friday, 3 July 2020

Publication Date
November 2020