Call For Papers
Special Issue on Multi-modal Computing for Biomedical Diagnosis and Analysis

Scope and Purpose

The COVID-19 pandemic has become a serious public security threat in the entire world. With the ever-growing volume of health-related data, accurate diagnosis based on biomedical intelligence is an emerging direction for healthcare development and communication. Biomedical imaging and deep learning have been extensively studied to assist clinicians to choose the most appropriate diagnosis as well as treatment and prevention plans. Notably, reliable diagnosis often relies on multi-modal data, which are collected from multiple sources or sensors. Recent advancements in multimodal computing for biomedical analysis provide a feasible solution to health communication and pathologic diagnosis. Therefore, how to perform efficient multi-modal computing to improve the user experience and diagnostic accuracy is undoubtedly one of the most important scientific topics of biomedical diagnosis and data analysis.

Considering the underexplored techniques on reliable multimodal medical analysis, this special issue is organized to provide a platform for biomedical or health communication scholars to disseminate their state-of-the-art theories and techniques in the multi-modal computing field. We invite researchers from the academia and industry to submit their high-quality original articles to promote the research and application of multi-modal biomedical intelligence systems.

Potential topics include, but are not limited to:

- Shallow and deep learning-based multi-modal computing for medical imaging
- Novel theories and applications of multi-modal biomedical fusion for clinical diagnoses
- Deep learning-based image processing and diagnostic analysis of multi-modal medical imaging data, such as early diagnosis of human diseases, accurate lesion segmentation, etc.
- Incomplete multimodal computing in disease diagnosis and health communications
- Self-supervised, semi-supervised, or unsupervised learning methods for biomedical imaging data
- Biomedical data augmentation using generative adversarial networks
- Adversarial learning for security, privacy, and trust on radiological images or other health-related data
- Collection, analysis, and mining of large-scale multi-modal biomedical databases
- Visualization and understanding of multi-modal biomedical data in health communication, disaster communication, and information seeking

- Surveys/review papers on multi-modal/multi-view learning/biomedical engineering

Submission Guidelines

Manuscripts submitted to this issue must be original research papers, and must not be previously published in any form and currently not under consideration in any publication outlet. Specifically, we do NOT accept papers that have been published in any conference proceedings. Authors should prepare their manuscript according to the "Guide for Authors" from the Information Processing & Management (IP&M) journal. To ensure that manuscripts are correctly assigned to this special issue, authors must select the option "VSI: MC4BD", when reaching "Article Type Selection / Issue selection" step during submission.

Important Dates

Submission Deadline: February 28th, 2022
Submission Syst. Open: October 1st, 2021

Guest Editors

Lead Guest Editor: **Zheng Zhang**, Bio-Computing Research Center, Harbin Institute of Technology, Shenzhen, China
darrenzz219@gmail.com

Shuihua Wang, Department of Mathematics and Statistics, University of Leicester, UK
shuihuawang@ieee.org

M. Emre Celebi, Department of Computer Science and Engineering, University of Central Arkansas, USA
ecelebi@uca.edu