J-BHI Special Issue on "Multimodal Learning in Medical Imaging and Informatics"

Large amounts of health-related data are produced daily, such as those from personal devices, e.g., fitness trackers or mobile applications, ambient sensors, clinical data in electronic health records, pathology reports, lab results, and medical images, and voice recordings, etc. The practice of modern medicine increasingly relies on data from multiple sources to guide better care. Modern data science, analytics, machine learning, and artificial intelligence-based tools embedded with self-learning mechanisms offer the promise to revolutionize/remodel medicine and patient care. Multimodal learning mechanisms that take advantage of the multitude of data sources are instrumental in realizing that promise. In this special issue, we invite novel research contributions describing tools and techniques that integrate multiple data types to describe a particular medical event/case toward developing higher confidence in their decision-making and guidance. Derivation of meaningful data from an intelligent fusion of medical imagery and electronic health records is an example of multimodal learning.

This special issue aims to attract AI tools that offer to revolutionize/remodel medicine and patient care by taking multiple data types into account with more accurate and efficient algorithms, which is an unmet need in the current routines, and its emergency started to be recognized by field pioneers, practioners, and even patients. Combining multiple data information has been always an active topic but with the new learning algorithms from AI, it becomes now an essential to combine complementary power of different data modality for optimal decisions for diagnosis, treatment, prognosis, and planning in many applications in medicine. In addition, we aim for research articles that employ large amounts of data, rather than works based on a limited pool of evidence. As we are not limited to one event or disease type (e.g., Tuberculosis, Lung Cancer and Covid-19), the proposed SI can attract many submissions, ranging from screening to diagnosis, prognosis, and surgery/treatment plans.

We invite articles that advance the state-of-the-art using one or more of the following areas: data science/analytics, pattern recognition, anomaly detection, text analytics, natural language processing, and other AI-driven techniques/algorithms. Technically, the special issue includes novel multimodal learning techniques from one or more of the following (and is not limited to): a) Augmented Intelligence, b) Active Learning, c) Deep Learning, d) Computer Vision, e) Image Processing, f) Pattern Recognition, and its applications in medical imaging and informatics.

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Key Dates
Deadline for Submission:	January 15, 2022
First Reviews Due:	April 15, 2022
Revised Manuscript Due:	June 15, 2022
Final Decision:	August 15, 2022