

IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS

J-BHI Special Issue on “Large scale video analytics for clinical decision support”

Biomedical videos are generated at unprecedented rates. Example applications include diagnostic, surgical and capsule endoscopy, cardiac ultrasound, gait analysis, video microscopy, video angioscopy, and clinical education. In clinical practice, biomedical videos are reviewed by clinical experts and then stored away, not to be observed or utilized again. The resulting large collections of biomedical videos present a unique opportunity for the development of artificial intelligence (AI), machine learning and deep learning diagnostic systems that can be trained and tested on large-scale biomedical video databases.

The special issue will address several challenges associated with the development of Computer-Aided Diagnostic Systems that are based on the use of large-scale biomedical video analysis methods. Critical challenges include the development of fast and reliable methods for biomedical video analysis, the effective storage and retrieval of large-scale biomedical video databases, the effective use of multi-scale techniques in space and time, the effective use of biomedical videos in multimodal representations, the development of explainable methods, and high-performance computing methods for processing large-scale video databases. Topics for this special issue include, but are not limited to:

- (i) AI, machine learning and deep learning biomedical video processing and analysis methods
- (ii) Explainable biomedical video representations
- (iii) Large-scale biomedical video database informatics
- (iv) Multimodal Computer-Aided Diagnostic systems using biomedical videos
- (v) Medical video compression and video representations for video analytics
- (vi) High-performance computing methods, networking and architectures for large-scale medical video processing.

Priority will be given to papers reporting original work supported by long-term analysis, carefully designed studies, large cohort validation, and supplemented by on-line data or resources that can be shared by the research community.

**Guest Editors**

Marios S. Pattichis
University of New Mexico, USA
pattichi@unm.edu

Scott T. Acton
University of Virginia
acton@virginia.edu

Constantinos S. Pattichis
University of Cyprus,
Biomedical Engineering Research Centre, Cyprus
pattichi@ucy.ac.cy

Key Dates

Deadline for Submission: 2nd Nov, 2021
First Reviews Due: 14th Dec, 2021

Revised Manuscript Due: 18th Jan, 2022
Final Decision: 18th Feb, 2022