

## Special Issue at Machine Vision Applications (Springer)

### Special Issue on Learning and Understanding of Biomedical Big Data

#### Summary and Scope

High-throughput imaging technologies have enabled researchers and practitioners to acquire large volumes of biomedical images automatically everyday. This has made it possible to conduct large-scale, image-based experiments for biomedical discovery. The main challenge and bottleneck in such experiments is the conversion of “biomedical big data” into interpretable information and hence discoveries. Computer vision has huge potential for automated analysis and understanding of such data, including image segmentation, object detection, shape analysis, object tracking, event detection, and computer-aided diagnosis. Not only do computers have more “stamina” than human annotators for such tasks, they also perform analysis that is more reproducible and less subjective. Recent years, novel machine learning techniques, especially deep learning, have revolutionized multiple areas in computer vision and significantly advanced the state-of-art.

This special issue serves to attract active researchers around the world to share their recent innovation in this exciting area. We solicit original contributions in three-fold: (1) present state-of-the-art theories and novel applications in biomedical big data analysis; (2) survey the recent progress in this area; and (3) build benchmark datasets.

The list of possible topics includes, but not limited to:

- Biomedical Big Data Representation
  - Hand-crafted/data-driven feature learning
  - Large-scale multimodal biomedical data acquisition
  - Novel dataset and benchmark for biomedical big data analysis
- Biomedical Big Data Learning
  - Biomedical big data organization, retrieval and indexing
  - Time-series modeling
  - Multimodal information fusion
- Biomedical Big Data Understanding and Applications
  - Image restoration
  - Image segmentation
  - Image Registration
  - Object detection & tracking
  - Event modeling and localization
  - Health, economics, and other applications involving biomedical big data

## **Submission Guideline**

Authors should prepare their manuscripts according to the online submission requirements of “Machine Vision and Applications” (MVA). All manuscripts will be peer-reviewed following the MVA reviewing procedure. The submissions should clearly demonstrate the evidence of benefits to society or communities at large. Originality and impact on society, in combination with the innovative technical aspects of the proposed solutions will be the major evaluation criteria.

## **Deadlines**

Submission Deadline: September 1, 2017

First Review: November 3, 2017

Revisions Due: December 22, 2017

Final Decision: March 23, 2018

Publication: April 27, 2018

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