

INVITED SESSION SUMMARY

Title of Session: Machine learning and labelling for biomedical visual data analysis and understanding

Name, Title and Affiliation of Chair:

Yen-Wei Chen, Professor, Ritsumeikan University, Japan
Wei Xiong, Dr, Institute for Infocomm Research, Singapore

Details of Session (including aim and scope):

Biomedical imaging technologies, such as microscopy, computerized tomography, magnetic resonance, etc., have created a lot of images and videos in observing biological, pathological and medical subjects. Automatic, semantic and quantitative analyses and understanding of the acquired visual data require advanced computing tools in biomedical and healthcare systems to address queries raised in disease/tumour detection, diseased/tumorous area measurement, disease staging, treatment evaluation, data retrieval, and so on. Context and situation of the pixels would be normally needed to derive semantic decisions. Rule-based methods become less accurate, effective and efficient in handling complex and large sets of data. Visual features play an important role in overall computing decision tools. Supervised machine learning and labelling learn features, models, concepts and events from labelled training data and apply the gained knowledge to predict status in new sets of data. These techniques can handle much more complex visual understanding problems. Machine learning and labelling techniques have contributed to the automatic analyses and understanding of visual data for biomedical and healthcare systems. Deep learning, a recent advance in machine learning has advanced the accuracy of pattern recognition, such as tumour detection, to a high level never achieved before. The aim of this session is to promote the use of machine learning and labelling for advanced biomedical visual data analysis and understanding.

The scope of the session include but not limited to: pathological image/video analysis, image/video segmentation, object detection, registration and matching, tracking, retrieval, big data analysis, object modelling, classification, new learning methods, GPU for machine learning, deep learning, machine learning applications, etc.

Important Dates and Deadlines

Submission of Papers: ~~1 Feb 2017~~ 17 Feb 2017
Notification of Acceptance: ~~24 Feb 2016~~ 1 March 2017
Upload of Publication Files: ~~13 March 2016~~ 20 March 2017

Submissions must be formatted according to the instructions which can be found on the Springer website [here](#) under "Instructions for Authors".

Papers must be submitted in PDF format for review purposes, but authors are required to upload editable word-processor files (LaTeX or MS Word) at the end of the review process.

The required paper length is 10 pages in publisher format. Papers longer than this may be subject to an additional charge. **Short paper (2 or 3 pages) is also welcome**

Papers to be considered for the conference must be submitted in PDF form through the PROSE online submission and review system.

Please visit the conference web site (<http://inmed-17.inmedhealth.org/submission.php>) for detailed information about paper submission.

Main Contributing Researchers / Research Centres (tentative, if known at this stage):

Prof Yen-Wei Chen, Ritsumeikan University, Japan
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