ML-CDS 2016: Multimodal Learning for Clinical Decision Support

October 17, 2016

2.00pm-6:00pm

Intercontinental Athenaeum

Athens, Greece

SIXTH INTERNATIONAL WORKSHOP ON MULTIMODAL LEARNING FOR CLINICAL DECISION SUPPORT

October 17, 2016
Athens, Greece

In Conjunction With
MICCAI 2016, Athens

Supported by

WELCOME MESSAGE

On behalf of the organizing committee, we welcome you to the Sixth Workshop on Multimodal Learning for Clinical Decision Support. The goal of these series of workshops is to bring together researchers in medical imaging, medical image retrieval, data mining, text retrieval, and machine learning/AI communities to discuss new techniques of multimodal mining/retrieval and their use in clinical decision support. Although the title of the workshop has been changing slightly over the years, the common theme preserved is the notion of clinical decision support and the need for multimodal analysis. The previous five workshops on this topic have been well-received at MICCAI, specifically Munich (2015), Nagoya (2013), Nice(2012), Toronto (2011), and London (2009). Continuing on the momentum built by these workshops, we have expanded the scope this year to take decision support to focus on multimodal learning.

As has been the norm with these workshops, the papers were submitted in 8 page double-blind format and were accepted after review. As in previous years, the program features an invited lecture by a practicing radiologist to bridge between medical image interpretation and clinical informatics. This year we chose to stay with an oral format for all the presentations. The day will end with a lively panel composed of more doctors, medical imaging researchers, and industry experts.

With less than 5% of medical image analysis techniques translating to clinical practice, workshops on this topic has helped raise the awareness of our field to clinical practitioners. The approach taken in the workshop is to scale it to large collections of patient data exposing interesting issues of multimodal learning and its specific use in clinical decision support by practicing physicians. With the introduction of intelligent browsing and summarization methods, we hope to also address the ease-of-use in conveying derived information to clinicians to aid their adoption. Finally, the ultimate impact of these methods can be judged when they begin to affect treatment planning in clinical practice.

We hope you will enjoy the program we have assembled and actively participate in the discussion on the topics of the papers and the panel.

Sincerely

Tanveer Syeda-Mahmood
Hayit Greenspan
Anant Madabhushi
Mehdi Moradi
Chairs, ML-CDS'16

Final Program

Afternoon Half-day Session: October 17, 2:00pm-6:00pm

2:00 – 2:05	**Welcome**
2:05 - 3:05	**Invited Speaker:** Advances in the Adoption of Clinical Decision Support in Medicine, Orest Boyko, M.D. Ph.D
3:05 - 3:30	**Oral 1:** *3-D Convolutional Neural Networks for Glioblastoma Segmentation* - Darvin Yi, Mu Zhou, Zhao Chen, and Olivier Gevaert, Stanford University, Stanford, CA.
3:30 - 4:00	**Oral 2:** *Neonatal Brain Segmentation from Multi-Modality MR Images using Fully Convolutional Networks* - Xinying Wang, Hao Chen, Lequan Yu, Tianjin Zhang, Jing Qing, and Pheng-Ann Heng, The Chinese University of Hong Kong, Chinese Academy of Sciences, Sichuan University, Hong Kong Polytechnic University, Hong Kong.
4:00 - 4:30	**Coffee break**
4:30 - 5:00	**Oral 3:** *Prediction of Autism Treatment Response from Baseline fMRI using Random Forests and Tree Bagging,* -Nicha C. Dvornek, Daniel Yang, Archana Venkataraman, Pamela Ventola, Lawrence H. Staib, Kevin A. Pelphrey, James S. Duncan, Yale University, Johns Hopkins University, George Washington University.
5:00 - 5:30	**Oral 4:** *Multimodal non-rigid registration of head and neck images with deep learning-based bone* segmentation, -Bulat Ibragimov, Franjo Pernu, Primoˇz Strojan, and Lei Xing, Stanford University, University of Ljubljana, Slovenia.
5:30 - 6:00	**Panel with experts from academia, clinicians and industry**