

Point-Of-Care Ultrasound

(POCUS Algorithms, Hardware, and Applications)



September 16, 2018
MICCAI @ Granada, Spain

<https://blog.kitware.com/events/pocus-miccai2018/>

Introduction

9:30 – 9:40 **Welcome and Workshop Goals**
Stephen R. Aylward
Kitware, USA

Oral Presentations

9:40 – 10:00 **Robust Photoacoustic Beamforming using Dense Convolutional Neural Networks**
Emran Mohammad Abu Anas, Haichong K. Zhang, Chloe Audigier, and Emad M. Bector
Johns Hopkins University, USA

10:00 – 10:20 **GLUENet: Ultrasound Elastography Using Convolutional Neural Network**
Golam Kibria and Hassan Rivaz
Concordia University and PERFORM Centre, Canada

10:20 – 10:40 **A Training Tool for Ultrasound-guided Central Line Insertion with Webcam-based Position Tracking**
Mark Asselin, Tamas Ungi, Andras Lasso and Gabor Fichtinger
Queen's University, Canada

10:40 – 11:00 **CUST: CNN for Ultrasound thermal image reconstruction using Sparse Time-of-flight information**
Younsung Kim, Chloe Audigier, Emran M. Anas, Jens Ziegler, Michael Friebe, and Emad M. Bector
Johns Hopkins University, USA

11:00 – 11:30 **BREAK**

11:30 – 11:50 **Quality Assessment of Fetal Head Ultrasound Images Based on Faster R-CNN**
Zehui Lin, Minh Hung Le, Dong Ni, Siping Chen, Shengli Li, Tianfu Wang, and Baiying Lei
Shenzhen University and Shenzhen Maternal and Child Healthcare Hospital, China

11:50 – 12:10 **Recent Advances in Point-of-Care Ultrasound using Real-Time Image Analysis**
Oliver Zettinig, Mehrdad Salehi, Raphael Prevost, and Wolfgang Wein
ImFusion GmbH and Technische Universität München, Germany

Live Demonstrations

12:10 – 12:30 **Lightning Introductions to Live Demonstrations**

12:30 – 13:25

Live Demonstrations

- **Fusing Hololens and Point-Of-Care Ultrasound Technology for Intuitive Procedure Guidance**
Luv Kohli
InnerOptic, USA
- **Markerless Inside-Out Tracking for 3D Ultrasound Compounding**
Benjamin Busam, Patrick Ruhkamp, Salvatore Virga, Beatrice Lentes, Nassir Navab, Christoph Hennersperger
Technische Universität München and FRAMOS GmbH, Germany; and JHU, USA
- **Ultrasound-Base Detection of Lung Abnormalities in Ultrasound Imagery using Single Shot Deep Convolutional Networks**
Sourabh Kulhare, Xinliang Zheng, Courosh Mehanian, Cynthia Gregory, Meihua Zhu, Kenton Gregory, Hua Xie, James McAndrew Jones, Benjamin Wilson
Intellectual Ventures Laboratory, USA and Oregon Health Sciences University, USA
- **Quantitative Echocardiography: Real-time Quality Estimation and View Classification Implemented on a Mobile Android Device**
Nathan Van Woudenberg, Zhibin Liao, Amir H. Abdi, Hani Girgis, Christina Luong, Hooman Vaseli, Haotian Zhang, Kenneth Gin, Robert Rohling, Teresa Tsang, and Purang Abolmaesumi
University of British Columbia and Vancouver General Hospital, Canada
- **Single-Element Needle-Based Ultrasound Imaging of Spine: An In Vivo Feasibility Study**
Haichong K. Zhang, Younsu Kim, Abhay Moghekar, Nicholas J. Durr, and Emad M. Boctor
Johns Hopkins University, USA
- **A Training Tool for Ultrasound-guided Central Line Insertion with Webcam-based Position Tracking**
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13:25 – 13:30

Closing Remarks

Organizing Committee

Stephen Aylward, Ph.D. - Kitware, USA
Gabor Fichtinger, Ph.D. - Queens University, Canada
Emad Boctor, Ph.D. - Johns Hopkins University, USA

Program Committee

Stephen Aylward, Ph.D. - Kitware, USA
Emad Boctor, Ph.D. - Johns Hopkins University, USA
Kevin Cleary, Ph.D. - Children's National Medical Center, USA
Gabor Fichtinger, Ph.D. - Queens University, Canada
Bradley Freeman, M.D. - Washington University, USA
Deborah Kane, M.D. - Washington University, USA
Luv Kohli, Ph.D. - InnerOptic, USA
Sean Montgomery, M.D. - Duke University Hospital, USA
Matt Oetgen, M.D. - Children's National Medical Center, USA
Sonia Pujol, Ph.D. - Brigham and Women's Hospital, USA