Queen's School of Computing

Distinguished Speaker Seminar Series

Interventional and Diagnostic Ultrasound: A Machine Learning Based Approach

In this talk, I present the development of advanced machine learning approaches for ultrasound-guided interventions and diagnosis. I will highlight three of the projects we are currently working on: 1) For the spine interventions, we have developed techniques that can automatically detect anatomical landmarks in ultrasound, and fuse ultrasound with a statistical model of the spine for guiding needle injections. 2) For prostate cancer diagnosis and treatment, we have demonstrated that automatic techniques can used for identifying cancer maps. Furthermore, we have developed techniques for automatic planning of prostate brachytherapy procedures. 3) For echocardiography, I will present the framework we have developed for automatic analysis of this data.

Thursday November 17, 2016

12:00 to 1:30 pm

Botterel Hall B139

Light Refreshments

Dr. Purang Abolmaesumi

Canada Research Chair in
Biomedical Engineering
University of British Columbia,
Vancouver, BC, Canada

Purang Abolmaesumi is the Canada Research Chair in Biomedical Engineering, a Killam Research Prize and Killam Research Fellowship recipient, and a Professor in the Department of Electrical and Computer Engineering at the University of British Columbia, Vancouver, BC, Canada. He is internationally recognized and has received numerous awards for his pioneering developments in ultrasound image processing, image registration and image-guided interventions. He served as the General Chair of the International Conference on Information Processing in Computer Assisted Intervention, 2014-2016, and has served on the program committees of the Medical Image Computing and Computing and Computer Assisted Intervention (MICCAI) and International Society for Optics and Photonics (SPIE) Medical Imaging. Dr. Abolmaesumi is an Associate Editor of the IEEE Transactions on Medical Imaging, and has served as an Associate Editor of the IEEE Transactions on Biomedical Engineering. His techniques for prostate segmentation are currently the standard-of-care in British Columbia and have been used to treat more than 2,000 patients.