The Chinese University of Hong Kong

Department of Biomedical Engineering

Time: 4:00 pm, 16 Apr 2018 (Mon)

Venue: Room 513, William M.W. Mong Engineering Building, CUHK

Next-Generation Ultrasonics: High Frame Rate Imaging of Physiological Dynamics

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Abstract

Using ultrasound for fetal scanning is perhaps a familiar concept to the general public, but using ultrasound to acquire images at frame rates well beyond the video display range is still a concept that is at its relative infancy. In this presentation, Alfred will give an overview of his laboratory's ongoing endeavors in high frame rate ultrasound imaging technology R&D. Particularly to be discussed are a few cardiovascular ultrasound innovations developed by Alfred's research group and how they can potentially contribute to cardiovascular diagnostics. These solutions are based upon the design of novel ultrasound imaging research hardware with programmable transceivers and high-speed GPU computing platforms. With these imaging innovations, it becomes possible to image complex flow dynamics at very high frame rates of over 1000 fps. Experimental demonstration in anatomically realistic phantoms will be shown, and in-vivo pilot data will be presented.

Biography

Alfred Yu is a Full Professor in Biomedical Engineering at the University of Waterloo. He obtained his undergrad degree in electrical engineering at the University of Calgary, and he completed his MASc and PhD training in biomedical engineering at the University of Toronto. He started his academic career at the University of Hong Kong, and he relocated his research group to Waterloo in 2015 to help spearhead Waterloo ECE department's biomedical engineering research portfolio. Alfred is the recipient of various career achievement prizes, including the IEEE Ultrasonics Early Career Investigator Award, the Frederic Lizzi Early Career Award, and the Ontario Early Researcher Award. He is now an Associate Editor of IEEE Transactions on Ultrasonics, Ferroelectrics, & Frequency Control and an Editorial Board Member of Ultrasound in Medicine and Biology. He is also the current Chair of the Medical Ultrasound TPC of the IEEE Ultrasonics Symposium.

*****ALL ARE WELCOME*****

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