Biomedical Discussion Group

"Ultrasound imaging innovations for live monitoring of complex flow dynamics"

Thursday October 29, 2015
10:30 – 11:30 am
EIT 3142

Alfred Yu
Electrical & Computer Engineering
University of Waterloo

Dr. Alfred Yu
Associate Professor, Electrical and Computer Engineering
University of Waterloo

Abstract:

Perhaps popularly known for its use in fetal scanning, ultrasound has already been enjoying a widespread role in today's clinical practice. Nevertheless, one demerit point that has been limiting ultrasound's diagnostic potential is its arguably second-rated image quality. In this talk, various cardiovascular ultrasound innovations with drastically superior visualization capabilities will be presented. At the core of our solutions is the design and use of a channel-domain imaging research platform that comprises a programmable transmit front-end, a pre-beamformed data acquisition module, and a GPU-based high-speed computing platform. With this enabling hardware, it becomes possible to image complex flow dynamics at very high frame rates of over 1000 fps by making use of plane wave excitation principles. The visualization performance of these flow imaging innovations will be illustrated through a series of carotid bifurcation imaging cineloops.

Biosketch:

Alfred Yu has a long-standing research interest in ultrasound imaging and therapeutics. He is now an Associate Professor in the ECE Department at the University of Waterloo. Alfred obtained his undergraduate degree in Electrical Engineering at the University of Calgary, and he received his M.A.Sc. and Ph.D. training in Biomedical Engineering at the University of Toronto. Before relocating to Waterloo, he was a Research Assistant Professor at the University of Hong Kong, where he served as the Principal Investigator of HKU Biomedical Ultrasound Laboratory. Alfred is a Senior Member of IEEE. He is now an Associate Editor of *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* and an Editorial Board Member of *Ultrasound in Medicine and Biology*. He also serves on the Technical Program Committee of *IEEE Ultrasonics Symposium* and *International Symposium for Therapeutic Ultrasound*.

If you are interested in meeting with Dr. Yu, please email CBB.

Event is FREE – please RSVP via EventBrite

Pay parking available in lots B or N (map)

CBB UNIVERSITY OF WATERLOO

UNIVERSITY OF WATERLOO FACULTY OF ENGINEERING

UNIVERSITY OF WATERLOO FACULTY OF SCIENCE