

Keynote Title: A Real-World Implementation of Cloud-Based AI System for Large-Scale AFib Screening - by Prof. Men-Tzung Lo, National Central University, Taiwan

Abstract:

Atrial fibrillation (AFib) is the most common arrhythmia, and the patients with AFib have five times higher risk for stroke. The prevalence is around 10% for the population over 65 years old. However, the occurrence of AFib can be episodic and sometimes asymptomatic which leads to underdiagnoses of AFib. New miniaturized intermittent ECG devices were adopted in several studies, and both population screening and home-based monitoring can significantly increase the detection rate. To develop an efficient and sustainable strategy for detecting undiagnosed AFib, we propose a cloud-based AI system for arrhythmia screening, especially for AFib. This system can be ubiquitously connected by incorporating with mobile devices in different scenarios such as health examination with real-time feedback or home-based monitor for the patients with 7-14 days screening. The system has been applied for Arrhythmia screening from Oct 2018 and over 14,000 people had been screened with 13.4% arrhythmia detection rate.



Keynote Speaker: Prof. Men-Tzung Lo's biography

Men-Tzung Lo, Ph.D., is Distinguished Professor of Department of Biomedical Sciences and Engineering, National Central University. The joint Lab directed by him and Dr. Chen Ln, Associated Professor of Department of Biomedical Sciences and Engineering, devote to two main research interests which are time varying interactions between multiple biological signals of human subjects and the changes of nonlinear properties in different physiological and pathological statuses. The Lab has been developing time saving nonlinear dynamic methods and revealing basic physiological principles and applying them to medicine for over 10 years. The Lab has published over 100 original peer-reviewed articles and has been invited to present their research at international conferences (e.g., The 4th and the 5th Asia Pacific Heart Rhythm Society Scientific Sessions; The 3rd Asian Epilepsy Surgery Congress). The Lab holds 16 US patents demonstrating the innovative nature of their work. One of their prowess accomplishments was the development on the methodology of cardiac fibrillation and catheter ablation, their works has been published on several target journals. Recently, the Lab is known for the live demo of mapping system for real time identification of the source of atrial fibrillation maintenance on the Asia Pacific Heart Rhythm Society 2013 at Hong Kong, this work has been recognized at 11th National Innovational Award, Taiwan.