Biennial since 1998
CSNDSP 2020

Special Session on
Fundamentals of machine learning and applications to biomedical signal processing

Bingo Wing-Kuen Ling
Guangdong University of Technology
yongquanling@gdut.edu.cn

Prof. Wing-Kuen Ling obtained his B.Eng. degree and the M.Phil. degree from the Hong Kong University of Technology in 1997 and 2000, respectively, as well as the Ph.D. degree from the Hong Kong Polytechnic University in 2003. He joined King's College London as a Lecturer in 2004. In 2010, he joined the University of Lincoln as a Principle Lecturer. Then, he promoted to a Reader in 2011. He joined the Guangdong University of Technology as a Full Professor in 2012. He was honored as the IET Fellow and the IEEE Senior Member in 2013 and 2008, respectively, and the China National Young Thousand Scheme Distinguished Professor and the Guangdong Province Jiangjing Scholar in 2013 and 2015, respectively. His research interests include symbolic dynamics of nonlinear digital signal processing systems, time frequency analysis, optimization theory, control theory as well as multimedia and biomedical applications.

Bonnie Ngai-Fong Law
Hong Kong Polytechnic University
ennflaw@polyu.edu.hk

Ngai-Fong Law received the B.Eng. degree with the first class honour from the University of Auckland in 1993 and a Ph.D. degree from the University of Tasmania in 1997. She is currently an associate professor in the Hong Kong Polytechnic University. Her research interests include signal and image processing, wavelet transform, image enhancement and compression. Recently she has also extended her study into new areas on bioinformatics and image forensics. The former involves works on gene expression and DNA sequence analysis while the latter considers source camera identification.

Scope of the session

Classical machine learning systems such as perceptrons, support vector machines and multi-layer perceptrons are used for performing the decision making. Recently, convolutional neural networks and extreme learning machines are employed to improve the performances of the learning systems. This special session mainly focuses on proposing new methods to further improve the performances of the learning systems as well as applying these new methods in biomedical signal processing systems such as blood glucose estimation systems, heart rate and respiratory rate estimation systems, blood pressure estimation systems, blood oxygen estimation systems, etc.

Prospective authors are invited to submit original and unpublished work on the following research topics related to this Special Session:

- Convolutional neural networks
- Extreme learning machines
- Blood glucose estimations
- Heart rate and respiratory systems
- Blood pressure estimation systems
- Blood oxygen estimation systems