Curtin University

FACULTY OF SCIENCE AND ENGINEERING
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

IEEE
Advancing Technology for Humanity
WA Section

IEEE Distinguished Lecture

Hyperspectral Unmixing: Insights and Beyond
Professor Wing-Kin Ma

Abstract: Hyperspectral unmixing (HU) is one of the most prominent research topics in hyperspectral imaging in remote sensing. HU aims at identifying the underlying materials and their corresponding compositions in the scene, using the high spectral degrees of freedom of hyperspectral images. Early HU research is based on smart intuitions from remote sensing, and recent involvements from other fields—such as signal processing, optimization and machine learning—have substantially enriched HU techniques. This talk is a semi-tutorial of HU. We will look into what are the key insights of HU from a signal processing perspective, how such insights lead to a unique branch of theory and methods for structured matrix factorization, and why HU has strong connections to problems from other areas such as machine learning, data analytics, blind source separation, computer vision and biomedical imaging. If time permits, we will also have a quick tour on hyperspectral super-resolution, an emerging and fundamentally intriguing topic in which HU also plays a role.

Biography: Wing-Kin (Ken) Ma is a Professor with the Department of Electronic Engineering, The Chinese University of Hong Kong. His research interests lie in signal processing, optimization and communications. His most recent research focuses on two distinctive topics, namely, structured matrix factorization for data science and remote sensing, and MIMO transceiver optimization. Dr. Ma is active in the Signal Processing Society. He served as editors of several journals, e.g., Senior Area Editor of IEEE Transactions on Signal Processing, Lead Guest Editor of a special issue in IEEE Signal Processing Magazine, to name a few. He is currently a member of the Signal Processing for Communications and Networking (SPCOM) Technical Committee. He received Research Excellence Award 2013–2014 by CUHK, the 2015 IEEE Signal Processing Magazine Best Paper Award, the 2016 IEEE Signal Processing Letters Best Paper Award, and the 2018 IEEE Signal Processing Best Paper Award. He is an IEEE Fellow and is currently an IEEE SPS Distinguished Lecturer.

2nd April, 2019

3:00-4:00 pm

followed by afternoon tea

Building 201

Lecture Theatre 201.413

Enquiries

Robyn Cornwell
9266 2600
r.cornwell@curtin.edu.au

Campus Map

http://properties.curtin.edu.au/maps/docs/campus_map.pdf

Please note that this event is free and open to non-IEEE members. Guests may park for free of charge in carpark A5.