

Invitation

September 23

**System
Identification**

Time: 9:00am-4:00pm, Monday, September 23, 2019

Venue: G2-315, 144 Xuan Thuy, Cau Giay, Hanoi

Blind and Semi-Blind System Identification

Blind System Identification (BSI) is a fundamental problem which is signal processing sometimes known by different names: blind deconvolution, blind equalization, blind deconvolution or blind separation of convolutive mixtures. In all these instances, the objective is an inverse problem where an observed (multi-channel) system output one seeks to identify the unknown channels and/or retrieve at best the unknown input signals of the considered system. BSI is often an ill-posed, difficult problem which is simplified in the context of communications system, by the addition of pilot sequences that are known at the receiver side. In such context, exploiting both pilot and data for the system identification is referred to as semi-blind processing. This lecture is addressed to a wide audience with general background in signal processing.

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Karim Abed-Meraim was born in 1967. He received the State Engineering Degree from Ecole Polytechnique, Paris, France, in 1990, the State Engineering Degree from Ecole Nationale Supérieure des Télécommunications (ENST), Paris, France, in 1992, the M.Sc. degree from Paris XI University, Orsay, France, in 1992 and the Ph.D. degree from the ENST in 1995 (in the field of Signal Processing and communications). From 1995 to 1998, he took a position as a research staff at the Electrical Engineering Department of the University of Melbourne where he worked on several research projects related to "Blind System Identification for Wireless Communications", "Blind Source Separation", and "Array Processing for Communications", respectively. From 1998 to 2012 he was Assistant then Associate Professor at the Signal and Image Processing Department of Telecom-ParisTech. His research interests are statistical signal processing and include system identification, blind source separation, adaptive filtering and tracking, array processing and statistical performance analysis. In September 2012 he joined the University d'Orléans, France (PRISME Lab) as a full Professor. He has been also a visiting Scholar at the Centre of Wireless Communications (National University of Singapore) in 1999, at the EE Department of Nanyang Technological University (Singapore) in 2001, at Telecom Malaysia Research and Development centre in 2004, at the School of Engineering and Mathematics of Edith Cowan University (Perth, Australia) in 2004, at the EEE Department of the National University of Singapore in 2006, at Sharjah University (UAE) in 2008-2009, at King Abdullah University of Science and Technology (KSA) in 2013, at King Fahd University of Petroleum & Minerals (KSA) in 2015 and 2017, and at Melbourne University (2017). He is an IEEE Fellow and the author of over 450 scientific publications including book chapters, international journals and conference papers and patents.

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PROGRAM

Morning session (9:00am - 11:30am)

1. Applications and basic concepts of BSI
2. BSI for SIMO (Single Input Multiple Output) systems

Afternoon session (1:30pm - 4:00pm)

3. BSI for MIMO (Multiple Input Multiple Output) systems
4. Semi-blind system identification
5. Concluding remarks & open problems