香港城市大學
City University of Hong Kong

Department of Electrical Engineering
Presents a Faculty Candidate Seminar on

Bayesian Signal Recovery for Linear, Bilinear and Nonlinear Systems

by

Dr Qinghua Guo
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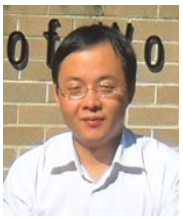
Abstract: In this seminar, I will present our recent research advancements in signal recovery for linear, bilinear and nonlinear systems, driven by challenging problems in radar, communications, optical sensing, and particularly emerging issues in integrated sensing and communications and 6G technologies. These problems are addressed using a Bayesian framework, leading to the development of innovative algorithmic approaches. Leveraging variational inference and powered by our unitary approximate message passing (UAMP), I will show that these problems can be tackled effectively with highly efficient message-passing implementations. Examples will highlight their outstanding performance in compressive sensing, ISAR imaging, blind grant-free multiple access, near-field (integrated) sensing and communications, and more.

Biography



Dr. Qinghua Guo received his Ph.D. degree in Electronic Engineering from City University of Hong Kong in November 2008. From 2008 to 2012, he worked as a Research Associate and later a Research Assistant Professor at the University of Western Australia. In 2012, he joined the University of Wollongong as a Lecturer, and he is currently an Associate Professor in the School of Electrical, Computer, and Telecommunications Engineering, and the Academic Program Director for the CCNU-UOW Joint Institute. Dr. Guo also holds an adjunct position as Associate Professor in the School of Engineering, University of Western Australia. Dr Guo's research spans signal processing, Bayesian inference, probabilistic graphical models, message passing, machine learning for signal processing, communications, radar and optical sensing, and he has published 320 articles, including 230 journal papers, in these fields. Dr. Guo was a recipient of the Australian Research Council's DECRA. He is listed among the World Top 2% of Scientists by Stanford University and World's Best Computer Science Scientists by Research.com. Dr. Guo held various roles in international conferences such as TPC vice chair, regional chair, track chair and TPC members. He served on the editorial board of multiple journals across IEEE, IET, Springer and Frontiers. Currently, Dr. Guo serves as an Associated Editor for IEEE Wireless Communications Letters and IEEE Transactions on Signal Processing.

Date	:	6 January 2025 (Monday)
Time	:	2:15pm – 3:15pm
Language	:	English
Venue	:	G4702, 4/F, Yeung Kin Man Acad Building

**** ALL ARE WELCOME ****

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