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Automatic
Control and
Systems
Engineering

The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Bearing-Based Distributed Control and Estimation over Robotic Networks

Dr Shiyu Zhao

*Lecturer, Department of Automatic Control and Systems Engineering
The University of Sheffield*

Wednesday, 16 November 2016 at 14:00
LT02, Sir Henry Stephenson Building

Abstract

In this seminar I will talk about my latest research results on distributed control and estimation over robotic networks. In particular, I will introduce a new bearing-based approach to solve some challenging problems that used to be difficult to solve with conventional approaches in the past. This bearing-based approach, which was originally motivated by vision-based multi-robot swarming, fully explores the critical role of bearing (or called direction) information in multi-robot control and estimation. With this approach, distributed formation control of multiple robots can be achieved with almost global stability ensured merely based on bearing information while distance information is not required. The bearing-based approach can also be applied to globally localize sensor networks with bearing-only measurements and provide a simple solution to control the scale of multi-robot formations to avoid obstacles.

Biography

Shiyu Zhao received the B.E. and M.E. degrees from Beijing University of Aeronautics and Astronautics in 2006 and 2009, respectively. He got the Ph.D. degree in Electrical Engineering from National University of Singapore in 2014. From 2014 to 2016, he served as postdoctoral researchers at the Technion - Israel Institute of Technology and the University of California, Riverside. He has joined the Department of Automatic Control and Systems Engineering at the University of Sheffield as a lecturer since September 2016. His research interests lie in distributed control and estimation of networked dynamical systems and its application to intelligent and robotic systems.

*Light refreshments will be served in the
foyer of the Sir Henry Stephenson Building following the seminar*