Nature-Inspired Distributed Motion Control Algorithms for Mobile Sensor Networks

Hosted by:

Institution of Engineers Sri Lanka – WA Chapter

Guest Speaker:

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Endeavour Research Fellow, University of Western Australia

DATE: 06 November 2017 **TIME: 5:30PM**

VENUE: Central Institute of Technology
30 Aberdeen St Northbridge WA 6003

TICKETS: N/A (Free event)

About the Guest Speech

Mobile sensor networks (MSNs) are often used for monitoring large areas of interest (AoI) in remote and hostile environments which can be highly dynamic in nature. Due to the infrastructure cost, MSNs usually consist of limited number of sensor nodes. In order to cover a large AoI, the mobile nodes have to move in an environment while monitoring the area dynamically. MSNs that are controlled by some existing motion control algorithms show poor area coverage performances due to considerable overlapping of sensing coverage and poor target tracking performances due to the lack of coordination between the sensor nodes. As a new class of emergent motion control algorithms for MSNs, anti-flocking and semi-flocking control algorithms enable MSNs to self-organize in an environment and provide impressive dynamic coverage and target tracking performances. The anti-flocking algorithms are inspired by the solitary behaviour of some animals who try to separate from their species in most of daily activities in order to maximize their own gains. The semi-flocking algorithms are inspired by the both solitary and collective animal behaviours.

About the Presenter

Nuwan Ganganath received the B.Sc. (Hons) degree with first class honours in electronics and telecommunication engineering from the University of Moratuwa in 2010, the M.Sc. degree in electrical engineering from the University of Calgary in 2013, and the Ph.D. degree in electronic and information engineering from the Hong Kong Polytechnic University in 2016. Ganganath won the Prize of the President of the International Physics Olympiads (IPhOs) at the 36th IPhO competition in Salamanca, Spain in 2005. He was a recipient of the Hong Kong Ph.D. Fellowship from the Research Grants Council, Hong Kong during his Ph.D. studies. Currently he is visiting the University of Western Australia under the Endeavour Research Fellowship Scheme sponsored by the Australian Government.

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