

Title: Dynamic Spectrum Access with Two Channel Sensing in Cognitive Radio Networks

Speaker:

Mr. Jin Lai
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Venue: Room 603, Chow Yei Ching Building

Abstract:

In cognitive radio networks (CRNs), efficiently discovering spectrum opportunities and coordinating multiple secondary users (SUs) to share the underlying spectrum opportunities are the most challenging issues. In this talk we first present a novel dynamic spectrum sensing and access model in CRNs. This model allows SUs to sequentially sense two channels in a single time slot and provides coordinated access of multiple SUs to the available channels. The presented access model is formulated as a channel assignment optimization problem which is shown to be NP-hard. We subsequently propose and analyze a Markov chain based greedy channel assignment scheme (MCGA). Performance evaluation shows that compared to the existing work, our approach can achieve significant improvements in terms of SU throughput and MAC delay.

Biography of the speaker:

Mr. Jin Lai is a PhD candidate in Department of Electronic Engineering at Macquarie University, Sydney, Australia. His research interests are in the fields of cognitive radio networks, resource allocation as well as network security.

Organizer: Dr. K.S. Lui