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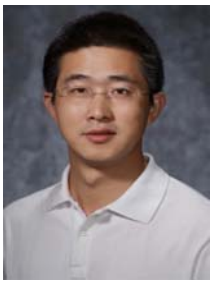
Network Selection for Secondary Users in Cognitive Radio Systems

Chonggang Wang, InterDigital Communications, Inc.

Date: November 1, 2010 (Monday)
Time: 5:00 pm (refreshment starts at 4:45 pm)
Place: 202 ECEC, NJIT

About the Speaker



Chonggang Wang received his Ph.D in computer science from Beijing University of Posts and Telecommunications. He is currently a senior staff engineer in InterDigital Communications, Inc. Before joining InterDigital, he had conducted research with NEC Laboratories America, AT&T Labs Research, University of Arkansas and Hong Kong University of Science and Technology. His research interests include Internet of things, ad hoc and sensor networks, cognitive/cooperative networks and future Internet. He has published more than eighty journal/conference articles and book chapters. He is on the editorial board of several international journals including IEEE Communications Magazine, IEEE Networks Magazine, ACM/Springer Wireless Networks, Wiley Wireless Communications and Mobile Computing, and Wiley Security and Communication Networks. He serves as the director of IEEE ComSoc MMTC E-Letter board. He has been co-organizing several special issues including "Advances in Passive Optical Networks" for IEEE Communications magazine, "Future Internet Service and Applications" for IEEE Network Magazine, "Evolution of Air-Link Technologies for Futuristic Wireless Communications" for IET Communications, and "Advances in Wireless Mesh Networks" for ACM/Springer Mobile Networks and Application. He also serves as TPC co-chair for IEEE INFOCOM 2011 Workshop on Cloud Computing, TPC co-Chair for IEEE ISCC 2011, Symposium co-chair for WOCC2011 Wireless Communications and Networking Symposium, and Symposium co-Chair for IEEE Globecom 2010 Communications Quality, Reliability and Modeling Symposium. He served in the technical program committee for numerous IEEE conferences including ICNP, INFOCOM, GLOBECOM, ICC and WCNC. He is a senior member of the IEEE.

About the Talk

Existing studies have demonstrated that uneven and dynamic usage patterns by the primary users of license-based wireless communication systems can often lead to temporal and spatial spectrum underutilization. This provides an opportunity for the secondary users (SUs) to tap into underutilized frequency bands provided that they are capable of cognitively accessing systems without colliding or impacting the performance of the primary users (PUs). When there are multiple networks with spare spectrum, secondary users can opportunistically choose the best network to access, subject to certain constraints. In cognitive radio systems, this is referred as the network selection problem for secondary users.

This talk will present our recent research results on network selection problem. Specifically, model-based and measurement-based solutions are proposed for cognitive network selection, that aim to optimize secondary users throughput and energy-efficiency subject to a target collision probability for the primary users. It has demonstrated that the proposed new approaches achieve better performance than Greedy and Random network selection.

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For more information contact Nirwan Ansari (973)596-3670. Check **http://web.njit.edu/~ieeenj/comm.html** for latest updates. Directions to NJIT can be found at: **http://www.njit.edu/about/visit/gettingtonjit.php**.