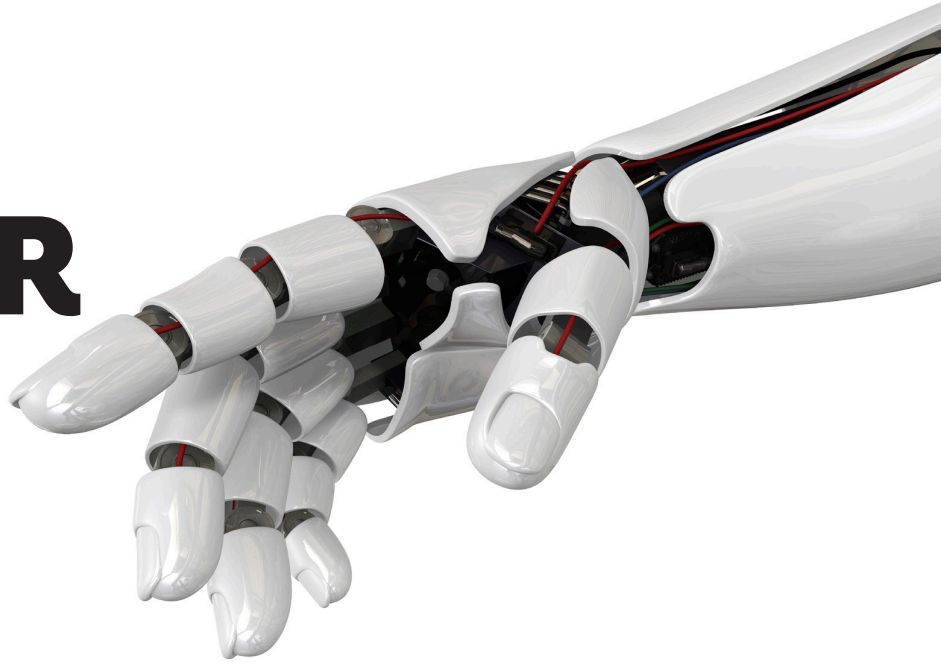


ECE SEMINAR

Department of Electrical
and Computer Engineering

April 14, 2017
10:00am-11:00am
Engr Bldg 2, Rm W342



Dr. Tao Chen

Control and Coordination in 5G RAN – COHERENT Approach

This talk will introduce a new control and coordination framework proposed by an EU project COHERENT to 5G heterogeneous radio access networks (RAN). The proposed solution targets the inter-cell coordination problem among densified small cells, which is prominent in 5G networks, and introduce several principles for a novel control solution in RAN. In the center of the approach is a centralized control unit responsible for the coordination among cells. Different from conventional approaches, the concept of network abstraction is introduced to abstract radio network status and present an abstracted network view at the centralized control unit for the coordination purpose. The centralized control unit will only decide the cooperative behavior of cells and detailed implementation of cooperation among cells will be implemented in the low layers. This hierarchy control architecture will significantly reduce the overhead to coordinate a large-scale mobile network. This talk will explain the proposed control architecture in detail and give three examples of applications: network energy saving in small cells, mmWave mobile relay in LTE networks, and network slicing in RAN. It shows the potential of the proposed control architecture to solve challenged problems in 5G networks.

Dr. Tao Chen is a senior researcher at VTT Technical Research Centre of Finland. He received his Ph.D. degree from University of Trento, Italy in 2007 and B.E. degree from Beijing University of Posts and Telecommunications in 1996. From 2003 to 2007, he worked with CREATE-NET, Italy, carrying out research on high-speed wireless LAN systems, UWB and cognitive radios. Since 2008, he has been with VTT, working on cognitive wireless networks, green communications and 5G network technologies. Currently he is the project coordinator of Europe H2020 5G PPP COHERENT project (www.ict-coherent.eu). He is the board member of EU 5G PPP Steering Board. From 2011 to 2015, he was the Management Committee member of EU COST Action IC1004. He is an IEEE senior member. His research interests include dynamic spectrum access, energy efficiency and resource management in heterogeneous wireless networks, software defined networking for 5G mobile networks, and social-aware mobile networks.



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