The University of Alabama
Department of Computer Science
Colloquium Series Speaker

Dr. Wenye Wang
Department of Electrical and Computer Engineering
North Carolina State University

Towards Reliable and Resilient Multi-Hop Wireless Networks

Friday, Jan. 20
HO 108
11:00 a.m.

Abstract:
In this talk we will describe algorithms for bi-directional transmission control and clustering in multi-hop wireless networks that attempt to optimize network performance with respect to reliability and resilience. In the first part of the talk we will consider the joint problem of energy-saving, network lifetime, scheduling in wireless sensor networks subject to event and query reliability requirements. In particular, we will describe a two-tier scheduling algorithm that maximizes network lifetime; and can be used for reliable data transfer to achieve residual energy fairness among sensor nodes. In the second part, we consider a self-organized wireless network in which a clustering topology can be formed via broadcasting mobility and energy attributes of mobile nodes. We will describe a heuristic algorithm to construct one-hop clusters that are resilient against node mobility.

Dr. Wang's Bio:
Wenye Wang received her B.S. and M.S. degrees from Beijing University of Posts and Telecommunications, Beijing, China, in 1986 and 1991, respectively. She also received the M.S.E.E. and Ph.D. degree from Georgia Institute of Technology, Atlanta, Georgia in 1999 and 2002, respectively. She is now an Assistant Professor with the Department of Electrical and Computer Engineering, North Carolina State University. Her research is on mobile and secure computing in single- and multi-hop wireless networks. She has served on program committees for IEEE INFOCOM, ICC, ICCCN in 2004 and 2005. She has been a member of the Association for Computing Machinery since 2002.