

Cross-layer Protocol Optimizations for Wireless Networks

Swades De, IIT Delhi

Date: June 20, 2012 (Wednesday)
Time: 11:30 am (refreshment starts at 11:15 am)
Place: 202 ECEC, NJIT

About the Speaker



Swades De received his B.Tech in Radiophysics and Electronics from the University of Calcutta, India, in 1993, M.Tech in Optoelectronics and Optical Communication from the Indian Institute of Technology (IIT) Delhi, in 1998, and Ph.D. in Electrical Engineering from the State University of New York at Buffalo, in 2004. Before moving to IIT Delhi in 2007, he was an Assistant Professor of Electrical and Computer Engineering at NJIT (2004–2007). He also worked as a post-doctoral researcher at ISTI-CNR, Pisa, Italy (2004), and has five years industry experience in India in telecommunication hardware and software development (1993–1997, 1999). His research interests include performance modeling and analysis, resource efficiency in multihop wireless and high-speed networks, broadband wireless access, and communication and systems issues in optical networks.

About the Talk (registration: https://meetings.vtools.ieee.org/meeting_registration/register/12947)

The talk will be divided into two parts. In the first part, I will present a quick overview of my broad areas of research, emphasizing on the research on bandwidth hungry network applications, namely, broadband wireless resource allocation, handover, cross-layer optimization techniques, and mesh routing. In the second part, I will focus on our current research on power constrained wireless ad hoc sensor networks, with particular emphasis on energy consumption optimized distributed forwarding without as well as with distributed transmit power control. We will discuss simple optimization techniques to maximize the network lifetime in one-to-one multihop communication applications. We will show the effect of distributed transmit power control on multi-user interference and distributed forwarding strategies. Our experience on hardware implementation of adaptive power transmissions will be highlighted. Further, we will discuss wireless RF energy scavenging and power transfer in context of prolonging wireless sensor network lifetime.

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