Research Colloquium
Department of Computer Science

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will speak on:

Adaptive Energy-Saving for Multihop Wireless Networks

11:00 a.m. on Wednesday, February 22 in Houser 108

As wireless networking becomes more ubiquitous by way of applications such as mesh networks and sensor networks, the energy consumption of wireless devices becomes increasingly important. Unfortunately, the energy density of batteries has shown relatively little improvement in recent times. Thus, energy-saving protocols are needed to increase the lifetime of these devices.

Our research focuses on the wireless interface since this has been identified as a major source of energy usage on hardware such as sensors. Within this domain, many previous approaches propose using fixed listening and sleeping intervals regardless of the network conditions. Our research has investigated adaptive listening and sleeping techniques where these intervals are adjusted based on observations of traffic patterns and channel state.

I will also discuss some work we have done in the area of security, particularly, key distribution for sensor networks. In this domain, we were the first to propose using a multiple channel protocol to improve the network connectivity and resilience to attackers.