Abstract:

Research on Wireless Sensor Networks (WSNs) explores many aspects of system, network, and application design. The basic problems are familiar, yet platform constraints of sensor-actuator nodes call for new solutions. The beginning of the talk surveys current WSN technology and related areas, illustrating typical software and applications. Then a proposal for sensor network programming will be described, based on a paradigm of coordinated control using synchronized timing. One of the platform constraints is the problem of efficiently managing limited power (batteries). Synchronized timing enables power conservation. Some interesting technical questions arise when timing schedules are disrupted, due to transient failures or manual errors in sensor network deployment; one example is the problem called "temporal partition". Some results will be presented about the possibility of WSN systems to automatically resynchronize if temporal partition occurs.

Bio:

Ted Herman is an Associate Professor in the Department of Computer Science at the University of Iowa. His research interests include distributed algorithms, robust network protocols, and sensor network programming. In 2007 he has served on the Program Committees of The 3rd IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS '07), The 5th ACM Conference on Embedded Networked Sensor Systems (SenSys'07), The 9th International Symposium on Stabilization, Safety and Security of Distributed Systems (SSS'07), and The 11th International Conference on Principles of Distributed Systems (OPODIS'07).

All ECE graduate students are required to attend.

For more information contact:
Assoc. Prof. Mark Andersland, ECE Dept., 335-6167, mark-andersland@uiowa.edu
http://www.engineering.uiowa.edu/~ece191/

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