

Title: Sensor Network Management – Debugging and Data Collection

Presenter: Hao Shuai

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Abstract

After deploying sensor networks, it is important to ask the following questions: How are the nodes distributed and connected? How is the whole network going on? As time goes by, which part of the network becomes bottleneck and what are the nodes with energy draining too fast? What is the impact to the whole network if some nodes die? All these questions involve network management.

Since management in sensor network covers a lot of interesting research areas, in this talk, I will focus on the debugging and data collection aspects. For debugging, I will discuss the “Sympathy” debugging system developed at UCLA. After that, I will present energy scan, the area we are currently working on. To collect energy data efficiently, we did some survey on data collection, especially the correlated data. “Snapshot query”, “correlation-dominating set” and “constraint chaining” will be discussed.

References

1. “Sympathy: A Debugging System for Sensor Networks”, in SenSys '05
2. “Snapshot Queries: Towards Data-Centric Sensor Networks”, in ICDE '05
3. “Efficient Gathering of Correlated Data in Sensor Networks”, in Mobihoc '05
4. “Constraint Chaining: On Energy-Efficient Continuous Monitoring in Sensor Networks”, in SIGMOD '06