Department of Mathematics, Statistics and Computer Science

St. Francis Xavier University

Presents

Top-k Query in Duty-Cycled Wireless Sensor Networks

by

Chunsheng Zhu

St. Francis Xavier University

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Aiming at finding the k nodes with the highest readings among sensor nodes, top-k query is a very useful and important query in wireless sensor networks (WSNs). Current researches about top-k query in WSNs mainly focus on always-on WSNs (A-WSNs) where sensors always keep awake and little research pays attention to top-k query in duty-cycled WSNs (D-WSNs) in which sensors dynamically wake and sleep to conserve energy.

In this proposal, we analyze the research issues when implementing the top-k query in D-WSNs and propose the DRC-WSNs (D-WSNs with data replication (DR) and connected k-neighborhood (CKN)) scheme. Initial simulation results provide the new insight that implementing the top-k query in DRC-WSNs can achieve the best tradeoff with respect to query data accessibility and query cost (total energy consumption, query response time), compared with implementing the top-k query in A-WSNs and DC-WSNs (D-WSNs with only CKN).

Refreshments will be served before the talk in AX24A