

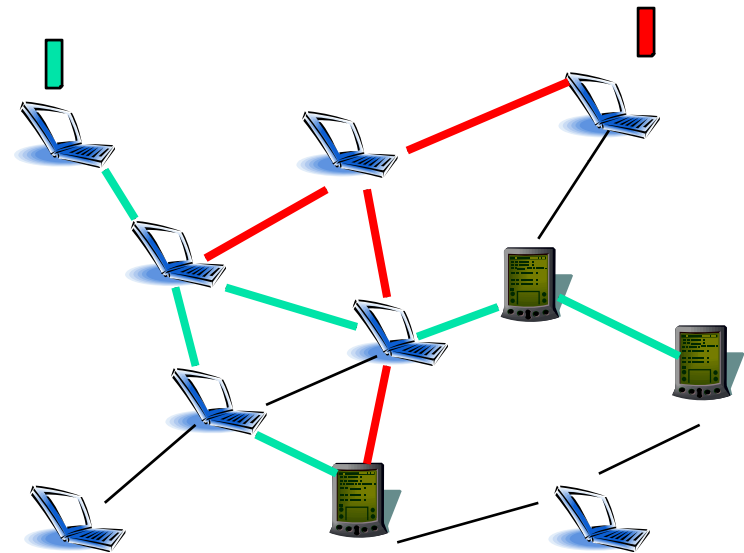


Research in Ad Hoc and Sensor Networks

Bin Tang

Ad Hoc Networks

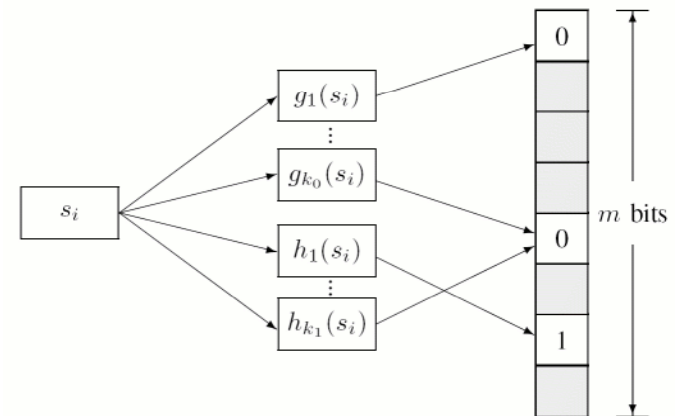
- Distributed Data Replication in Ad Hoc Networks Using Game-Theoretic Analysis
 - Previous work either does not consider multiple data items, or does not consider the distance among nodes.
 - Our work found Nash Equilibrium with both considered



Ad Hoc Networks

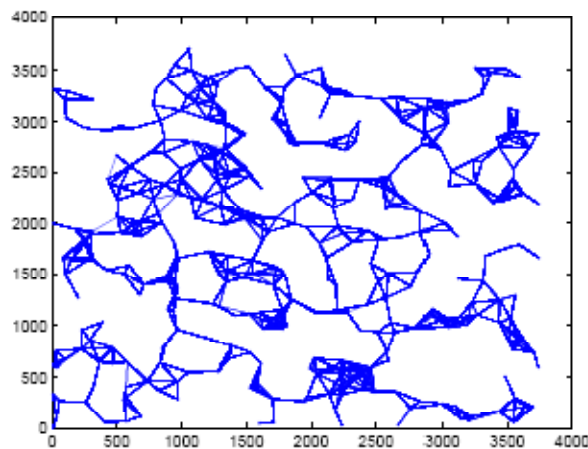
- A cross-layer approach of data caching in ad hoc networks
 - Previous research is based on proactive routing protocol; too much overhead

- Benefit-based data caching using bloom filter
 - To reduce the size of nearest cache table and traffic overhead in previous work

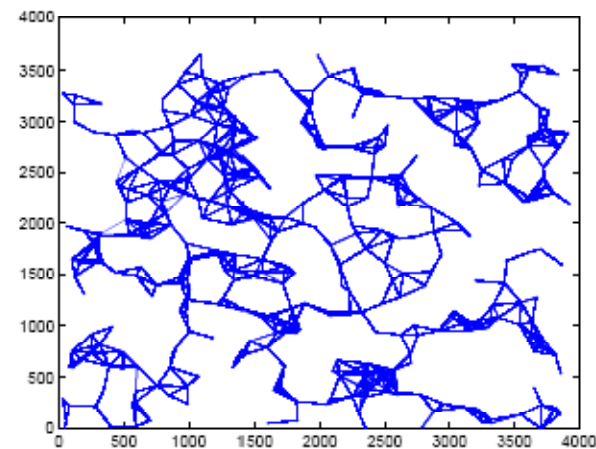


Sensor Networks

- Distributed Localization using Angle Measurement



(a) Original graph.



(b) Embedded graph.

Figure 8: The embedding of UDG with 400 nodes, size of largest connected component = 378, average node degree = 5.05, missed connection is 13, distance violation is 25.

Sensor and Actor Networks –

where sensors meet robots in networked control systems

- Robot-aided coverage and connectivity.
- Data gathering and network maintenance (in terms of coverage and connectivity) should be addressed together.
 - Previous research deals with data gathering and network maintenance, separately.

Let's get real – Sensor Network Kit

- 30 IRIS processor/radio boards
- 20 sensor boards
- 10 Gateways
- What are we doing?
 - TinyOS and LiteOS
 - Epidemic data dissemination
 - Can Iris talk/work with Garcia?

