Wireless Link Reversal Algorithm Simulation

Charles Wang, University of Illinois at Urbana-Champaign
ADVISOR: Nitin Vaidya

**Background**

- Link reversal algorithms provide a simple mechanism for routing in ad hoc wireless distributed networks.
- A mobile ad hoc network is a temporary interconnection network of mobile wireless nodes without a fixed infrastructure.

**Goals**

- Build a simple routing simulation tool for future studies.
- Understand the fundamentals of ad hoc and sensor networks based on computational algorithms and theories.
- Implement the famous event-driven simulation to simulate unexpected hazards during normal operation.

**Research Plan**

- We successfully built the routing simulator and explored its functionality.

**Research Results**

- Ad Hoc Walkie-Talkie Project
- Algorithms for Ad Hoc and Sensor Networks
- Topology Maintenance Algorithm
- Discovering Internet Topology
- Mathematical Graph Theory
- Epidemic Models in Ad Hoc Networks

**Fundamental Challenges**

- The actual topology of the fast-evolving Internet network is difficult to graph.
- Creating a friendly user interface is important yet difficult.