

# Survey of Ad Hoc Network Routing Protocols

Team Adhocracy  
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# Coming Up

- Project Overview
  - Problem Description
- Routing Algorithm Choices
  - Source Routing: DSR
  - Reactive: CHAMP
  - Geographical: GPSR
- Approach
  - Simulation

# Project Overview

- Problem: Routing in ad hoc networks presents unique challenges
  - Quickly changing topology
  - High packet loss
  - Multiple paths more likely
  - Communication based on proximity
    - Location information may be useful
- Project: Compare traditional algorithm(s) to algorithms specific to ad hoc networking

# Dynamic Source Routing (DSR)

- Reactive routing protocol
  - Routes are discovered on demand
- Can allow integration with other IP networks
- Simple enough to be implemented in wireless card firmware
- Allows sender to choose between routes
- Scales to networks of around 200 nodes

# Champ

- Cache and Multi-Path Routing Protocol
  - Reactive protocol, like DSR
- Multiple Paths and Caches copies of packets.
- If a packet can't get through a cached copy will be sent on another route.
- Authors say it is significantly better than AODV and DSR.

# GPSR

- Greedy Perimeter Stateless Routing for Wireless Networks
- Uses Geographic Location to recreate topology
- Packets are forwarded using two methods:
  - Greedy Forwarding
  - Perimeter Forwarding
- Claims
  - Fewer protocol packets
  - Higher success of delivery
  - Small routing algorithm footprint

# Approach

- We will create a simulation to implement some of these algorithms
  - Existing simulators like ns-2 too complex to work with for short project
  - Simulation of location, signal distance, possibly battery life
  - Try to approximate other issues like noise and collisions as packet loss
  - Graphical interface to simulation
- Through the simulation, we can compare some attributes of the algorithms

# References

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