Our Approach

Control-theoretic Utility Optimization over Mission Lifetimes in Multi-hop Wireless Networks

Sharanya Eswaran, Archan Misra, Thomas La Porta

What we have:
- Bandwidth and battery are scarce.
- Each mission has a different utility to the global task.
- Missions have different durations and schedules.

What we want:
- Utilize bandwidth and energy optimally.
- Allocate more bandwidth (and battery) to higher utility missions.
- Ensure sensor nodes last as long as the missions need them.

Simulation Results

Conclusion & Future Work
- Framework for optimal utility adaptation according to network lifetime, taking mission dynamics into account
- Handles both deterministic and statistical knowledge
- Generic and flexible framework that can model different scenarios
- Different stochastic models for mission dynamics
- Renewable energy scenarios, MANETS, etc
- Published at IEEE SECON 2009

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