CS344M
Autonomous Multiagent Systems

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Good Afternoon, Colleagues

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- Is ant rafting related to the readings?
- How to use ideas from the papers to create novel applications?
- How long for stabilization of a system?
- Will an optimial path for finding food be created with ant algorithm?
- What are limitations for physical swarming robots?
- Ratio between intelligence and number of agents?

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- Class midterm evaluation survey out, due next Wednesday night

Principles

- Try to avoid functional decomposition
- Simple agents (small, forgetful, local)
- Decentralized control
- System performance from interactions of many
- Diversity important: randomness, repulsion
- Embrace risk (expendability) and redundancy
- Agents should be able to share information
- Mix planning with execution
- Provide an "entropy leak"

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- ...Do network routing
  - build routing table mapping destinations to links at each node
  - Goal: minimal transit time for packets

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- Character animation (Reynolds, Star Wars)

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- How does "altruism" arise?
- What does this mean about agent-based systems?
  - Should we create self-interested ants?
  - Or do we need to give them a global objective function?

Social Experiment

- Half the class moves to each side of the room

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- Now walk back to where you were before – what behaviors/policies are you using to avoid collisions?

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- Anticipate potential collisions with velocity obstacles
- Use linear or quadratic programing to select best safe (collison-free velocity) to avoid collision while moving to target location

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  - Use role assignment to determine position in formation

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- What is the class consensus prediction?

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- Katie Genter (videos)