CS344M
Autonomous Multiagent Systems

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Good Afternoon, Colleagues

Are there any questions?

- How does a parasite go extinct?

Logistics

- Executable teams due next Tuesday
- Final reports due on Thursday
- Final tournament: Monday, December 17th, 2pm, BUR 136

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- My thesis defense
  - Monday, 11:30 AM, ACES 3.408
  - TEXPLORE: Temporal Difference Reinforcement Learning for Robots and Time-Constrained Domains

Genetic Algorithms

- Keep a population of individuals
- Each generation:
  - Evaluate their fitness
  - Throw out the bad ones
  - Change the good ones randomly (crossover, mutation)
  - Repeat

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The fitness function matters

- Playing against top-notch competition -> no info
- Playing against a single foe -> too brittle

Rosin and Belew

- Co-evolve 2 populations: Evolve software (hosts) and test suites (parasites)
- "New genotypes arise to defeat old ones"
  - Why not self-play?

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- Tests on Nim and 3D Tic Tac Toe
- Stop when perfect play is reached

Hosts and Parasites

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- Other ways to divide fitness appropriately?

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- Examples of co-evolution in nature?
- Other approaches to competitive co-evolution?