

CS344M

Autonomous Multiagent Systems

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Good Afternoon, Colleagues

Are there any questions?

Logistics

- Progress reports due at beginning of class Thursday
 - 2 hard copies
 - Attach your proposals
 - Anonymized soft copy

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- Peer reviews due next Thursday

Genetic Algorithms

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

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- When to stop learning run?
- Examples of co-evolution in nature?
- Other approaches to competitive co-evolution?