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
Logistics

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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)
  - Repeat
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The fitness function matters
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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?
Rosin and Belew

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• Three techniques to help:
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- Tests on Nim and 3D Tic Tac Toe
- Stop when perfect play is reached
Competitive Co-evolution

- Could we apply competitive co-evolution to robot soccer?
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- What about agents having to work together as a team?
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- When to stop learning run?
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- Examples of co-evolution in nature?
Competitive Co-evolution

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- What about agents having to work together as a team?
- When to stop learning run?
- Examples of co-evolution in nature?
- Other approaches to competitive co-evolution?