CS344M
Automonomous Multiagent Systems

Prof: Peter Stone

Department of Computer Science
The University of Texas at Austin
Good Afternoon, Colleagues

Are there any questions?
Logistics

- How to read a research paper
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  - Some have too few details...
Logistics

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  - Others have too many.
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- Next week’s readings posted
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- FAI talk Thursday in ACES 2.402, 2pm
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- Thesis proposal Wednesday in ACES 3.116, 8:45am
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- Final project proposal assigned
Final Projects

Proposal (10/7): 3+ pages

• What you’re going to do; graded on writing
Final Projects

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Progress Report (11/4): 5+ pages + binaries + logs
• What you’ve been doing; graded on writing
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Team (11/30): source + binaries
- The tournament entry; make sure it runs!
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Final Report (12/2): 8+ pages
  • A term paper; the main component of your grade
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  • Oral presentation
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Due at beginning of classes
Overview of the Readings

Darwin: genetic programming approach
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**Stone and McAllester:** Architecture for action selection
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Riley: Coach competition, extracting models
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Riedmiller05: Reinforcement learning
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Graf: Closed loop walk on real robots
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Riedmiller05: Reinforcement learning

Graf: Closed loop walk on real robots

Shafii: Open loop walk in 3d simulator
Evolutionary Computation

- Motivated by biological evolution: GA, GP
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- Search through a space
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  - Need a **representation, fitness function**
  - Probabilistically apply search operators to set of points in search space
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- Randomized, parallel hill-climbing through space
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Some slides from *Machine Learning* (Mitchell, 1997)
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- 1-1-1 record. Tied a good team, but didn’t advance
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- 1-1-1 record. Tied a good team, but didn’t advance
- Success of the method, but not pursued
Architecture for Action Selection

- (other slides, video)
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- (other slides, video)
- downsides
Architecture for Action Selection

- (other slides, video)
- downsides
- don’t call “action selection”