CS378
Autonomous Multiagent Systems
Spring 2005

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The University of Texas at Austin

Week 6a: Tuesday, February 21st

Good Afternoon, Colleagues

Are there any questions?

Logistics

- Next week's readings posted

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- Final project — have partners?
- Use the undergrad writing center!

Final Projects

Proposal (3/2): 3+ pages

- What you're going to do; graded on writing

Progress Report (4/6): 5+ pages + binaries + logs

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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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Kok03: Coordination graphs

Riedmiller05: Reinforcement learning

Architecture for Action Selection

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- Nash equilibrium: no agent could do better given what others are doing.

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- $R_i(A) \mapsto \mathbb{R}$
- Coordination problem: $R_1 = \ldots = R_n = R$
- Nash equilibrium: no agent could do better given what others are doing.
- May be more than one (chicken)

Example from the paper

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- First eliminate rules based on context
- What does it mean for G_3 to collect all relevant rules?
- What does it mean for G_3 to maximize over all actions of a_1 and a_2?
- How are the results propagated back?
- Let's try again with G_1 eliminated first

Application to soccer

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- Assume global state information
- Finds pass sequences and starts players moving ahead of time.
- Note the results: with and without coordination.

Class Discussion

Safder Hasan on "action selection" vs. coordination graphs