Autonomous Multiagent Systems

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Week 3, Tuesday (9/10)

Any Questions?

Progress

- How's programming assignment 2 going?
- Other administrative issues of general interest?

Writing

- Direct, articulate responses
  - Thesis sentence
  - Supporting argument
  - Demonstrate that you know what you're saying

- Style
  - Avoid "would/could/might be."
  - Nitpicks: minor if I still know what you're saying
  - But still distracting

Important for Project/Proposal

Review - Episodic

$\boxed{\text{Consisting of episodes}}$

- There are restarts
- A property of environments
- You might think of non-learning agents as non-episodic

Overview of the Readings

- Brooks
- TCA
- RoboCup Synthetic Agents Challenge

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Brooks' Goals

- Autonomous mobile agents that are seen as intelligent
- No interest in demonstrating how humans work
- No interest in applications
- Timely, robust, do something

Merkwelt

- *Merkwelt* $\sim$ "perceptual world"
- Every agent has its own *Merkwelt*.
- Why should robots use a representation based on our *Merkwelt*?
- Do we know our own *Merkwelt*?

RoboCup Synthetic Agents Challenge

- Learning Challenge
- Teamwork Challenge
- Opponent Modeling Challenge

Learning Challenge

- early years – Offline individual, collaborative learning
- then some online skill and collaborative team learning
- Open challenge – on-line adversarial learning
  - Especially during a single game

Teamwork Challenge

- early years – hard-wired positions
- now, more flexible teamwork
  - plan decomposition – roles, play modes
  - executing team plans – ISIS
  - contingency planning – not so much

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Opponent Modeling Challenge

- First: Build in models
- Off-line review – statistical engines
- Open challenge:
  - On-line tracking (Andou)
  - On-line strategy recognition
- Last year – coach
  - Omniscient view
  - Standard language
  - Coachable teams

Next Week's Readings

- Multiagent Systems – an overview
  - Another overview (optional)
- Pushing Brooks' approach to MAS
- CMUnited-98 champion team – skills