

CS378

Autonomous Multiagent Systems

Spring 2005

Prof: Peter Stone
TA: Nate Kohl

Department of Computer Sciences
The University of Texas at Austin

Week 2a: Tuesday, January 24th

Good Afternoon, Colleagues



Good Afternoon, Colleagues

Are there any questions?

Good Afternoon, Colleagues

Are there any questions?

- Vertical/horizontal MAS stacking
- Continual action important? Rules out soccer?
- “So as to affect future states” important?

Logistics

- Reading responses

Logistics

- Reading responses
 - Sorry about textbook availability!

Logistics

- Reading responses
 - Sorry about textbook availability!
- Programming assignment

Logistics

- Reading responses
 - Sorry about textbook availability!
- Programming assignment
 - C tutorial?

Logistics

- Reading responses
 - Sorry about textbook availability!
- Programming assignment
 - C tutorial?
- Next week's readings are up:
 - Brooks' reactive robots
 - A more deliberative architecture
 - RoboCup case study

Logistics

- Reading responses
 - Sorry about textbook availability!
- Programming assignment
 - C tutorial?
- Next week's readings are up:
 - Brooks' reactive robots
 - A more deliberative architecture
 - RoboCup case study
- Talks in the department:

Logistics

- Reading responses
 - Sorry about textbook availability!
- Programming assignment
 - C tutorial?
- Next week's readings are up:
 - Brooks' reactive robots
 - A more deliberative architecture
 - RoboCup case study
- Talks in the department:
 - David Moriarty Thursday, 11am

Logistics

- Reading responses
 - Sorry about textbook availability!
- Programming assignment
 - C tutorial?
- Next week's readings are up:
 - Brooks' reactive robots
 - A more deliberative architecture
 - RoboCup case study
- Talks in the department:
 - David Moriarty Thursday, 11am
 - Satinder Singh Friday, 11am

Ladies and Gentlemen...



Ladies and Gentlemen...

... Shabih Syed on the Hayes-Roth Agent

The Hayes-Roth Agent

Intelligent agents continuously perform three functions:

1. Perception of dynamic conditions in the environment;
2. Action to affect conditions in the environment; and
3. Reasoning to interpret preceptions, solve problems, draw inferences, and determine actions.

Franklin and Graesser Definition

An autonomous agent is a system situated within and a part of an environment that senses that environment and acts on it, over time, in pursuit of its own agenda and so as to affect what it senses in the future.

Franklin and Graesser Definition

An autonomous agent is a system situated within and a part of an environment that senses that environment and acts on it, over time, in pursuit of its own agenda and so as to affect what it senses in the future.

1. “over time... so as to affect what it senses in the future”
2. “in pursuit of its own agenda”

My Requirements of Agents

- They must **sense** their environment.
- They must **decide** what action to take (“think”).
- They must **act** in their environment.

My Requirements of Agents

- They must **sense** their environment.
- They must **decide** what action to take (“think”).
- They must **act** in their environment.

Complete Agents

My Requirements of Agents

- They must **sense** their environment.
- They must **decide** what action to take (“think”).
- They must **act** in their environment.

Complete Agents

Multiagent systems: Interact with other agents

My Requirements of Agents

- They must **sense** their environment.
- They must **decide** what action to take (“think”).
- They must **act** in their environment.

Complete Agents

Multiagent systems: Interact with other agents

Learning agents: Improve performance from experience

My Requirements of Agents

- They must **sense** their environment.
- They must **decide** what action to take (“think”).
- They must **act** in their environment.

Complete Agents

Multiagent systems: Interact with other agents

Learning agents: Improve performance from experience

Autonomous Bidding, Cognitive Systems,
Traffic management, **Robot Soccer**