CS378 Autonomous Multiagent Systems Spring 2004

Prof: Peter Stone

TA: Mazda Ahmadi

Department of Computer Sciences
The University of Texas at Austin

Week 2a: Tuesday, January 27th



Are there any questions?

Are there any questions?

Will there be a definition? Does it matter?

Are there any questions?

- Will there be a definition? Does it matter?
- What's up with "persistence"/ "operating through time"?

- WICS: "How to prepare for the career fair"
 - Thursday, Jan 29, at 7:00 PM in TAY 2.106.

- WICS: "How to prepare for the career fair"
 - Thursday, Jan 29, at 7:00 PM in TAY 2.106.
- Reading responses

- WICS: "How to prepare for the career fair"
 - Thursday, Jan 29, at 7:00 PM in TAY 2.106.
- Reading responses
- Programming assignment

- WICS: "How to prepare for the career fair"
 - Thursday, Jan 29, at 7:00 PM in TAY 2.106.
- Reading responses
- Programming assignment
- Mailing list replies



- WICS: "How to prepare for the career fair"
 - Thursday, Jan 29, at 7:00 PM in TAY 2.106.
- Reading responses
- Programming assignment
- Mailing list replies
- Rescue: so far at most 4 people

- WICS: "How to prepare for the career fair"
 - Thursday, Jan 29, at 7:00 PM in TAY 2.106.
- Reading responses
- Programming assignment
- Mailing list replies
- Rescue: so far at most 4 people
- Next week's readings are up:
 - Brooks' reactive robots
 - A more deliberative architecture
 - RoboCup case study (addition)

Ladies and Gentlemen...



Ladies and Gentlemen...

...Laurel Issen on "Trusting Agents"

Writing Assessment

- What did you think of these readings?
- What was good about them?
- How could they have improved?

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"

Thermostats

- Are they agents or not?
- How does Wooldridge resolve this?

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

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

Complete 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

- 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

- 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, Robot Soccer

Environment \Longrightarrow sensations, actions

• fully observable vs. partially observable (accessible)

- fully observable vs. partially observable (accessible)
- deterministic vs. non-deterministic

- fully observable vs. partially observable (accessible)
- deterministic vs. non-deterministic
- episodic vs. non-episodic

- fully observable vs. partially observable (accessible)
- deterministic vs. non-deterministic
- episodic vs. non-episodic
- static vs. dynamic

- fully observable vs. partially observable (accessible)
- deterministic vs. non-deterministic
- episodic vs. non-episodic
- static vs. dynamic
- discrete vs. continuous

- fully observable vs. partially observable (accessible)
- deterministic vs. non-deterministic
- episodic vs. non-episodic
- static vs. dynamic
- discrete vs. continuous
- single-agent vs. multiagent

- fully observable vs. partially observable (accessible)
- deterministic vs. non-deterministic
- episodic vs. non-episodic
- static vs. dynamic
- discrete vs. continuous
- single-agent vs. multiagent
- mobile?