CS344M
Autonomous Multiagent Systems

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The University of Texas at Austin

Good Afternoon, Colleagues

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Are there any questions?

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- Class registration and waitlist

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  - A more deliberative architecture
  - RoboCup challenge paper

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But there are examples. . .

Thermostats

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

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- Meeting scheduler
- Computer-game-playing agent

Not Intelligent Agents

- Thermostat
- Telephone
- Answering machine
- Pencil
- Java object

Your Agent Examples

Your Agent Examples

- **Automotive:** Stop light, Autonomous Car
- **Physical Control:** Roomba, Automatic sliding door
- **Software:** antivirus software, Google Now, Laptop battery management, Macbook light intensity controller, Parasolid
- **Game/entertainment:** StarCraft SCV, Counterstrike

- **Service:** Stock trading agent

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- **Actions**: Wave, Stand, Clap
- **Observations**: colors, reward
- **Goal**: Find an optimal *policy*
  - Way of selecting actions that gets you the most reward

How did you do it?

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- What is your policy?
- What does the world look like?

Formalizing My Example

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- $\mathcal{O} = \{\text{Blue}, \text{Red}, \text{Green}, \text{Black}, \ldots\}$
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$$o_0, a_0, r_0, o_1, a_1, r_1, o_2, \ldots$$

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Unknowns:

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$$o_i = \mathcal{P}(s_i) \qquad r_i = \mathcal{R}(s_i, a_i) \qquad s_{i+1} = \mathcal{T}(s_i, a_i)$$