Good Afternoon, Colleagues
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Are there any questions?
Logistics

- Questions about the syllabus?
Logistics

• Questions about the syllabus?

• Class registration
Logistics

- Questions about the syllabus?
- Class registration
- Problems with the assignment?
Logistics

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- Mailing list — announcements yesterday
Logistics

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- Class registration
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  - FAI talks
  - CC Daniel (urieli@cs), and me on everything
Logistics

● Questions about the syllabus?

● Class registration

● Problems with the assignment?

● Mailing list — announcements yesterday
  – FAI talks
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● Assignments up through week 3
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- Problems with the assignment?
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- Assignments up through week 3
Example Intelligent (autonomous) Agents

- Autonomous robot
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- Information gathering agent
  - Find me the cheapest?
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- E-commerce agents
  - Decides what to buy/sell and does it
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- Meeting scheduler
Example Intelligent (autonomous) Agents

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- E-commerce agents
  - Decides what to buy/sell and does it

- Air-traffic controller

- Meeting scheduler

- Computer-game-playing agent
Not Intelligent Agents

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

Environment $\rightarrow$ sensations, actions
Environments

Environment $\Rightarrow$ sensations, actions

- fully observable vs. partially observable (accessible)
Environments

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

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Environments

Environment $\implies$ sensations, actions

- fully observable vs. partially observable (accessible)
- single-agent vs. multiagent
- deterministic vs. non-deterministic
- episodic vs. sequential
- static vs. dynamic
- discrete vs. continuous
- known vs. unknown
Your Examples

- programmable thermostat(3); maid robot(2); automated cook(2); intelligent house; beer retriever
Your Examples

- programmable thermostat (3); maid robot (2); automated cook (2); intelligent house; beer retriever
- vending machine
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• programmable thermostat(3); maid robot(2); automated cook(2); intelligent house; beer retriever
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• HAL 9000; anthropomorphic robot
Your Examples

- programmable thermostat (3); maid robot (2); automated cook (2); intelligent house; beer retriever
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- HAL 9000; anthropomorphic robot
- autonomous tank; counter-terrorist robot; exploration robot; harvester; self-parking car
Your Examples

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• video game AI(2); tetris-player(2); self-solving rubics cube
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• Cleverbot (NLP); Siri; psychotherapist; question answerer
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- content recommender (2); spam classifier; search engine
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- automatic homework doer;
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- song composer (2); jazz accompanist; drummer; Guitar hero player
- congressman
- automatic homework doer; reading response generator
An Example
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- You, as a class, act as a learning agent
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- **Actions**: Wave, Stand, Clap
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- **Goal**: Find an optimal *policy*
An Example

- You, as a class, act as a learning agent
- **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?
How did you do it?

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