CS640

Margrit Betke

1st lecture
Welcome to AI!
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TFs: Yiwen Gu
Stan Lai
What is AI?
AI

perception
- computer vision
- natural language processing
- human computer interfaces

reasoning
- expert systems
- planning
- inference
- logic
- learning
- neural nets
- genetic algorithms

action
- games
- robotics
- agents
What is AI?

AI studies

– how to build “intelligent computers”
– how to make machines that exhibit characteristics associated with intelligence in humans
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– how to build “intelligent computers”
– how to make machines that exhibit characteristics associated with **intelligence** in humans

Machine that do things that would require intelligence if done by humans
What is AI?

AI studies
– how to build “intelligent computers”
– how to make machines that exhibit characteristics associated with intelligence in humans

• think, reason
• solve problems
• learn
• understand language

Machine that do things that would require intelligence if done by humans
“Modern” View of AI:
AI studies computations for
– perception
– reasoning ← “classic AI”
– action
Agent-oriented View of AI:

An Agent
- is (semi-) autonomous
- does independent piece of problem solving
- is “situated” i.e. sensitive to its own environment
- belongs to society of agents and interacts with other agents

Intelligence emerges from society of agents
Alan Turing’s Test = Imitation Game

“Can machines pass a behavior test for intelligence?”
Alan Turing’s Test = Imitation Game

“Can machines pass a behavior test for intelligence?”

Person: “Are you the woman?”

She: “I’m the woman.”

He: “I’m the woman.”

Can person tell the difference?
Alan Turing’s Test = Imitation Game

“Can machines pass a behavior test for intelligence?”

Person: “Are you the woman?”

Phase 1: He: “I’m the woman.”

Phase 2: Computer: “I’m the woman.”

Can person tell the difference?
Turing’s Prediction (1950):
In 2000, a computer will have a X% chance of deceiving a human interrogator that it was human in a Y min conversation.

What do you think is X? What Y?
Turing’s Prediction (1950):
In 2000, a computer will have a 30% chance of deceiving a human interrogator that it was human in a 5 min conversation.
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Weizenbaum’s Eliza (1966):
Interactive program that mimics a psychologist.
Goal: De-mystify computers
Results: lots of misunderstandings
concern for “social implications of computers”
Emacs version of Elzia in action: M-x doctor

Web version:
https://www.cyberpsych.org/eliza/
Next: Going through course syllabus

http://www.cs.bu.edu/faculty/betke/cs640