

# Brief Introduction

CS4811 - Artificial Intelligence

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# Outline

Course logistics

What is AI? (Chapter 1 - Introduction)

Agents and environments (Chapter 2 - Intelligent Agents)

# Course logistics

- ▶ 2 exams (25% each, 50% total)
- ▶ No final exam
- ▶ Mix of programming and written assignments (30% + 20% = 50% total)
- ▶ Topics
  - ▶ Neural networks
  - ▶ Search (uninformed, informed)
  - ▶ Topics from machine learning, e.g., decision trees, clustering
  - ▶ Reasoning in logic
  - ▶ Probabilistic reasoning

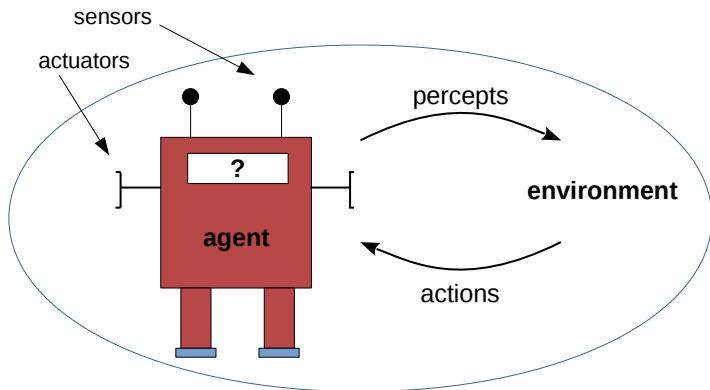
# What is AI?

Systems that:

think like humans	think rationally
act like humans	act rationally

- ▶ Cognitive science
- ▶ The Turing test
- ▶ Logic
- ▶ Doing the right thing
  - ▶ Knowledge representation
  - ▶ Reasoning (algorithms)

# Agents and environments



- ▶ Agents include humans, robots, softbots, thermostats, etc.
- ▶ The agent function maps percept histories to actions:

$$f : P^* \rightarrow A$$

# Basic agent types

In order of increasing generality (and complexity):

- ▶ simple reflex agents
- ▶ reflex agents with state
- ▶ goal-based agents
- ▶ utility-based agents

All of the basic types can be turned into learning agents

## Sources for the slides

- ▶ AIMA textbook (3<sup>rd</sup> edition)
- ▶ AIMA slides (<http://aima.cs.berkeley.edu/>)