

COMP3411/9814 Artificial Intelligence

Term 1, 2024

Week 1 Tutorial

This page was last updated: 02/10/2024 17:47:51

1. Introductions

Introduce yourselves, get to know your tutor

2. What is Intelligence?

Define in your own words:

- a. intelligence
- b. artificial intelligence
- c. agent
- d. rationality
- e. logical reasoning

3. Current State of the Art

Pick a few tasks from the following list, or others of your own choosing, and do a Web search to discover to what extent they can currently be performed by computers:

- a. Play a decent game of table tennis (ping-pong)
- b. Drive in the center of Cairo, Egypt
- c. Drive along a curving mountain road
- d. Play games like Chess, Go, Bridge or Poker
- e. Discover and prove new mathematical theorems
- f. Compose a piece of music, or paint a painting
- g. Write an intentionally funny story
- h. Give competent legal advice in a specialized area of law
- i. Translate spoken English into spoken Swedish (or Chinese) in real time
- j. Perform a complex surgical operation

For the currently infeasible tasks, try to find out what the difficulties are and predict when, if ever, they will be overcome.

4. PEAS Description

Choose a few of the tasks from Part 3 and, for each task, develop a PEAS description of the task environment, characterize the environment according to the properties given in lectures, and select a suitable agent type (or, discuss the relative merits of the different agent types presented in lectures).

5. **LLM's**

To what extent are predictive models like ChatGPT really intelligent? What are their strengths and limitations?

6. **Evolution**

Why would evolution tend to result in systems that act rationally? What goals are such systems "designed" to achieve?

7. **General AI**

Do you believe human-level AI will ever be achieved? Why? Why Not? Are you persuaded by any of the commonly posed objections to AI?

8. **Societal Impact**

What changes, challenges and potential dangers are likely to arise from progress in AI and Robotics – for the economy, and for society in general?
