

Monash University Faculty of Information Technology
FIT3080 Week 2 Lab 1: Rationality and Agents

Exercise 0: Academic Integrity

Demonstrate to your tutor that you have obtained a score of at least 80% on all 4 [Academic Integrity quizzes](#). Go to the Unit Information page on Moodle for more details on academic integrity and links to the quizzes.

Exercise 1: What is artificial intelligence?

What is your definition of *artificial intelligence*?

Exercise 2: Rationality

Describe a rational agent function for a vacuum agent for the case where each movement also costs one point, assuming that once a square has been cleaned, it does not get dirty.

Exercise 3: Rationality

For each of the following assertions, say whether it is true or false, and explain why.

- (a) An agent that senses only partial information about the state cannot be perfectly rational.
- (b) There exists a task environment in which every agent is rational.
- (c) A perfectly rational poker-playing agent never loses.

Exercise 4: PEAS

For each of the following activities, give a PEAS (Performance measure, Environment, Actuators, Sensors) description of the task environment, and characterize it in terms of the environment properties such as those listed in pages 13–14 of the Week 1 lecture slides.

- (a) Playing soccer.
- (b) Performing a high jump.
- (c) Knitting a (jumper or) sweater.

Exercise 5: *AI for the Social Good versus Electronic Machines Out of Control*

Ray Solomonoff (in 1967), Cambridge physicist Stephen W. Hawking (in 2014) and many others have pointed to concerns about - and (potential) dangers of - artificial intelligence (AI). Others talk of *AI for the social good*. Some people possibly believe in both dangers and good.

- (a) What are your views on this issue?
- (b) Should legislation be introduced - if so, what and by whom?

(This topic from Exercise 5 will probably be mentioned again, at least in passing [related to theme of ethics], before the end of semester.)

Assignment Project Exam Help

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