IT2024 ASSIGNMENT 02 (Due Date: Oct 25, 2024)

Instructions: You only have to answer all questions. Your answers can be in Chinese or English.

The following points should be noted.

- If you use a word processing software to edit your answer, please make sure that the file to be submitted is either in WORD or PDF format.

- You need to submit the answer file before the due date to the Gmail account johnsum.nchu@gmail.com.

- Email heading must be conformed to IT2024_Assignment02_studentID.

- File name must be conformed to IT2024_Assignment02_studentID.

- It is a bonus assignment. If you are too busy to complete the assignment, you can just skip it.

The assessment of this course is solely depended on your work in the course project including your written report and your oral presentation. The scores obtained from the assignments are bonus to be marked up on your project score.

Question 1

In the lecture note *Introduction to Intelligent Technology* (September 23, 2023), I have introduced two types of intelligent systems namely Type I intelligent and Type II intelligent system.

(a) What are the differences between Type I and Type II systems?

(b) Which type should ChatGPT or Google Gemini belong to?

(c) Which type should Midjourney belong to?

(d) Which type should OpenAI Sora belong to?

(e) Which type should AlphaGO belong to?

Question 2

In the supplementary note *IT2024 Supplementary Note 01*, I have commented that the competition amongst AI tools with similar functions is the same the competition of software with similar functions. Word processing software competition is an example happening in the 1980s to 1990s. E-Marketplaces competition is another example happening in the 1990s. In the end, some word processing software (resp. e-marketplaces) are now obsolete.

(a) In today AI tools competition, which firm and which tool will be survive? Give your reasons.

(b) Which AI firm(s) will be acquired by other tech giants? Give your reasons.

(c) Have you ever used any one of these AI tools, as depicted in the table in the supplementary note, in your work or in your living? What is(are) it(they)? Why you need to use it(them)?

Question 3

On the design of a processor, such as CPU and GPU, many processor developers like AMD and Intel have developed their own collection of architectures.

(a) Today, which processor developers have developed their own collection of processor architectures? What are the names of their collections?

(b) Which processor developer(s) have licensed its(their) processor architecture(s) to other processor developers?

(c) Name five processors which are developed on top of licensed processor architectures?

Question 4

This year, the Nobel Prize in Physics is awarded to John Hopfield and Geoffrey Hinton.

(a) State their contributions, in physics, which let them get the Nobel Prize.

(b) What is(are) the key contribution(s) of John Hopfield leading to today AI/ML systems?

Question 5

In recent years, many firms have promoted AI systems (resp. AI tolls) for manufacturing.

(a) Name two systems, other than similar tools in Microsoft Copilot, which have been applied in industry.

(b) From the systems given in (a), state for each system if it is Type I or Type II intelligent system?

Question 6

It is believed that AI systems (resp. tools) could be used for your learning.

(a) Name three systems (resp. tools) that you have been using for your learning.

(b) State the reasons why you need to use such systems (resp. tools).

(c) If you are not allowed to use such systems (resp. tools), can you learn?