

IT2026 ASSIGNMENT 03

(Due Date: October 23, 2026)

Instructions: You need to answer all questions in this assignment and your answers must be in English. Moreover, the following points should be noted.

- If you use a word processing software to edit your answer, please make sure that the answer file 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 `IT2026_Assignment03_studentID`.
- Filename must be conformed to `IT2026_Assignment03_studentID`.
- **It is a bonus assignment. If you are too busy to complete the assignment, you can just skip it and then send me an email via the same Gmail account informing me that you are unable to submit the answer file.**
- Your answer file must be submitted before time 00:00 of the due date.

The assessment of this course is solely depended on your work in the course project including your written report and your oral presentation. The score obtained from this assignment is bonus. It will be added to your project score.

1 Introduction

This assignment is designed for examining a student if he/she has grasped the concepts and knowledge delivered on October 16, 2026 lecture and the following teaching material.

https://john.digi-pack.io/IT/LLM_as_an_Interpreter_20261016.pdf.

Question 1

The following questions are about the history of neural network which was delivered in the lecture.

- (a) Which scholars were awarded with Noble prize on their finding on the "All-or-Nothing" property of a neuron in the central nervous system?
- (b) In 1943, Warren McCulloch and Walter Pitts published a paper entitled "A Logical Calculus of the Ideas Immanent in Nervous Activity". In it, both scholars gave the first mathematical abstraction model for a neuron. Apart from the mathematical neuron, what is the (major) contribution of this work?
- (c) The mathematical abstraction model for a neuron proposed by Warren McCulloch and Walter Pitts had eventually influenced two scholars developing and investigating the properties of "neural networks" in the 1950s. Which two scholars are they?
- (d) In the 1980s, a group of scholars was restarted to investigate the information processing behaviors of a human brain. The group was led by two scholars in California. Which university were they affiliated?
- (e) In the end of 2000s and the early 2010s, there was a hot topic on neural network. What is it?
- (f) In 2010s, the European Union had initiated a project on human brain. What is the title of this project?

1.0.1 Question 2

The following questions are about the content in the document entitled "Large Language Model

as an Interface and an Interpreter”, in particularly Figure 2.

- (a) Today, which tech firms design and make GPU?
- (b) State six tech firms which provide cloud platforms for their users.
- (c) State six tech firms which develop LLM for use.
- (d) If a computer does not have any GPU, is it able to run an LLM-powered application?
- (e) State three personal applications which are powered by an LLM.
- (f) State three tech firms which developed APIs for GPU interfacing.