# **Week 1 Exercise**

**Question 1:** there are different interpretations of artificial intelligence in different contexts. Please elaborate on the artificial intelligence in your eyes.

AI (artificial intelligence) is the brain of a machine or robot that simulate a human’s brain. To define an AI we need to understand the concept of intelligence, intelligence is an ability of human’s brain that help we understand language, physic, math, or natural laws, … by learning, listening, seeing all the things around us. For example, we know what an apple look like because we have seen thousands of apples, similar with us AI can do what a human can do. The main goal of Artificial Intelligence is to develop self-reliant machines that can think and act like humans. These machines can mimic human behavior and perform tasks by learning and problem solving.

**Question 2:** Artificial intelligence, machine learning and deep learning are three concepts often mentioned together. What is the relationship between them? What are the similarity and different between the three terms?

Artificial Intelligence is the concept of creating smart intelligent machines.

Machine Learning is a subset of artificial intelligence that helps you build AI-driven applications.

Deep Learning is a subset of machine learning that uses vast volumes of data and complex algorithms to train a model.

The common between these term is they all mimic the reaction of human brain and can self-learning through the data.

The different between them is the amount of human interaction and data processing.

* AI can understand voice or language and convert them into digital format and process it.
* Machine learning uses the past data and predict the output.
* Deep learning is an artificial neuron net work and mimic the process of human brain, they require a lot of input as activation function. The activation function takes the “weighted sum of input” as the input to the function, adds a bias, and decides whether the neuron should be fired or not.

**Question 3:** describe a field of AI application and its scenarios in real life base on your own life experience.

AI can make decision in the automatic car navigation through the input of sensor, GPS, signal, location and avoid unwanted accident.

Ex: tesla’s autopilot mode

AI can create fictional conversation between 2 mans with given details like personality and circumstances.

AI that can self-evolving through lesson and eventually conversation direct with human or act natural like a human without any guidance.

A collage of a person

Description automatically generated with medium confidenceAI can create a fictional image with selected theme through a real photo or description.

Ex: anime filter

**Question 4:** which chip is for deep neural network and ascend AI processors. Please brief these four major module.

chips include graphics processing units (GPUs), field-programmable gate arrays (FPGAs), and application-specific integrated circuits (ASICs) that are specialized for AI. General-purpose chips like central processing units (CPUs) can also be used for some simpler AI tasks, but CPUs are becoming less and less useful as AI advances.

Like general-purpose CPUs, AI chips gain speed and efficiency (that is, they are able to complete more computations per unit of energy consumed) by incorporating huge numbers of smaller and smaller transistors, which run faster and consume less energy than larger transistors.

**Question 5:** trends of AI in the future in your view.

Base on stage of developing of human civilization, the possibility of AI are vast and vary depend on the need. And the biggest trend in the future is going to be space exploring using AI program or Robot to exploring alien environmental which is dangerous for human and let the AI collect samples for researching. The second AI trend going to be AI assistance for many needs like healthcare, researcher AI assistance , self-evolving AI can research faster than any researcher.