Q1: There are different interpretations of artificial intelligence in different contexts. Please elaborate on the artificial intelligence in your eyes.

After having read, learned, and attended some free courses for common knowledge of AI (Artificial Intelligence), I consider there are mostly two types: the narrow and the general. The narrow type, which is exposed by its name, is capable of solving 1 particular task such as facial detection, object classification, generating images from texts, etc. This type of AI can't fully replace the human role in society since it should only be used to enhance our ability in tasks. For the general type, I believe it is more like us than its narrow counterpart since the word 'general' shows that it can perform combined tasks such as expressing its own emotions and putting its own comments for artwork rather than just synthesizing from the data on which it trained, etc

Q2: Artificial intelligence, machine learning and deep learning are three concepts often mentioned together. What is the relationship between them? What are the similarities and differences between the three terms?

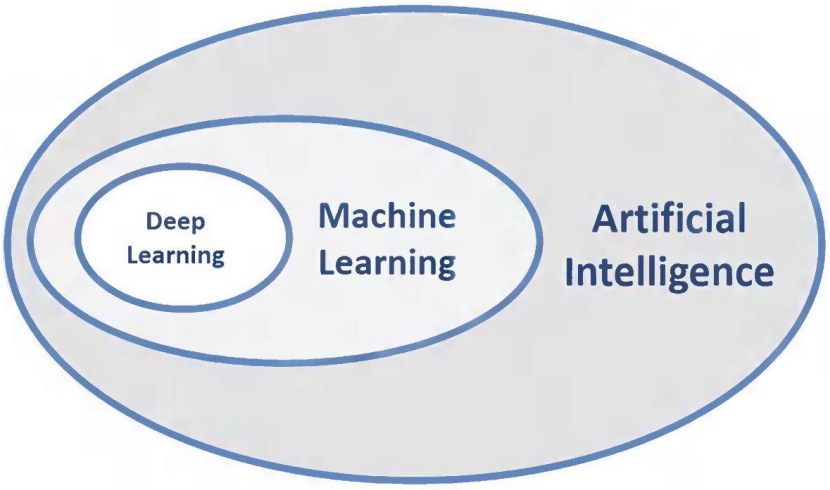

Figure 1: The common relationship of AI, Machine Learning and Deep Learning

As shown in Figure 1, the relationship between the 3 terms, for a better review, some brief definitions are considered: AI or Artificial Intelligence is the ability of the computer to mimic human intelligence, for instance, imitating the way we classify different people, objects, or cases of life. Machine Learning is a term or a technique for computers to learn experience with the performance of a particular task through the implementation of statistics, decision trees, etc to compute the parameters that suit the data and use them to perform the next cases of the task. And finally, Deep

Learning is a technique of learning by mimicking the work of the human neural system, Deep Learning usually implies the Deep Artificial Neural Network.

Accordingly, Deep Learning is implemented with layers having a large number of nodes (like human neurons) that contains mathematic functions classifying the performance value P from experience E of task T. Thus, it's a subset of Machine Learning with deeper mathematic and statistical evaluation on the training data

The purpose of Machine Learning is to compute the parameters that suit the output of the function to the training data and lastly use them to perform tasks, or for short, the more clean data a computer trained on, the more intelligent it be. Thus, Machine Learning is a subset of Artificial Intelligence, since it's not the only one that makes the computer to be smarter, for instance, the Genetic Algorithm (GA) solves both constrained and unconstrained optimization problems that are based on natural selection, the process that drives biological evolution to finally find to the optimal solution.

Q3: After reading the artificial intelligence application scenarios in this chapter, please describe in detail a field of AI application and its scenarios in real life based on your own life experience.

The most common AI nowadays, I have seen on many websites of retailers, the Chatbot. Since the advances in natural language processing, current chatbots have been enhanced with much more intelligence, for instance, the ways they answer some questions are closer to our humankind, lyrically, poetically, and friendly, rather than some boring explicitly programmed sentences.

Or in the field of Computer Vision, based on the unique character of each person, such as landmarks, computer detection is more accurate to differentiate people, or locating the exact points for medical, and forensic purposes.

In addition, the simplest example of Machine Learning, the recommending systems, which learn your needs through websites, pages, and news that you have watched, or read, generate similar results and recommend to you if you haven't found anything

Q4: Which chip is for deep neural networks and Ascend AI processors. Please brief these four major modules.

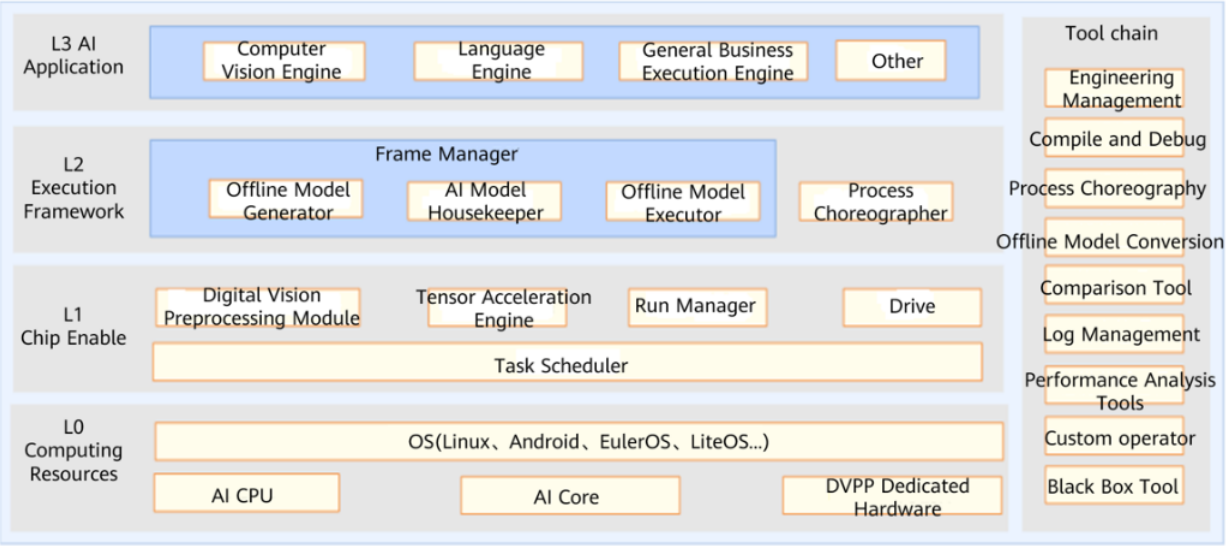

Figure 2: Logic Architecture of Ascend AI Processor (4 Levels/Modules)

(Source: huawei.com)

Briefly, there are 4 modules/levels of a processor:

L3 application enabling layer: It is an application-level encapsulation layer that provides different processing algorithms for specific application fields.

L2 execution framework layer: encapsulates the framework calling capability and offline model generation capability.

L1 chip enabling layer: bridges the offline model to Ascend AI chips. L1 accelerates the offline model for different computing tasks via libraries.

L0 computing resource layer: provides computing resources and executes specific computing tasks. It is the hardware computing basis of the Ascend AI chip.

Q5: Based on your current knowledge and understanding, please elaborate on the development trends of artificial intelligence in the future in your view

I believe the trend of AI nowadays is to make them closer to us. The superiorly enhanced answering ability of ChatGPT has shown the gap in answering questions by AI is no more a problem. However, that is just only the case in society, for the industrial, agricultural, or even military fields, the trend of the swarm of intelligent devices or vehicles is growing over the days. There are no more individual robots, or smart cars to deal with complex physical problems, they will be solved in groups, in the swarm with more communication between electronic devices and vehicles rather than all coming in for the human to decide.