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Artificial intelligence

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

AI is short for 'Artifical inteligence' which mean an intelligence created by human. AI is developed using multiple algorithm to create a computer system that can perform many task like human. Some of abilities of a AI are: machine learning which is involved with algorithms and data for AI to perform tasks wihout preprogramed, deep leaning which is ablility to study and fully understand the information. When combined, these elements enable an AI to engage in autonomous thinking and decision-making to solve problems, similar to humans.

2. 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?

-Artificial intelligence is the ability for a computer system to perform tasks like normal human intelligence.

-Machine learning is a smaller field of AI. Which is explain by the ability of AI to learn from data without being preprogramed. This ability helps AI to use algorithm and models to analyze data, search for patterns, and make predictions.

-Deep learning is a subfield of Machine learning that involves focusing in artificial neural networks. This help computers recognize, classify, search for patterns, and make predictions with higher accuracy.

Similarities:
· All three concepts involve using computers to perform tasks that would typically require human intelligence.
· They all rely on algorithms and mathematical models to learn from data.
Differences:
· AI is the broadest concept and encompasses all forms of machine-based intelligence.
· Machine Learning is a subset of AI that involves training algorithms to learn patterns from data.
· Deep learning is a subfield of Machine Learning that uses deep neural networks with many layers to achieve high performance.
· DL requires large amounts of data and computing power to be effective, while ML and AI can be achieved with smaller datasets and less computing power.

3. 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.
As my own experience and my own knowledge I think Seri is Apple's virtual assistant for iOS that uses voice recognition and is powered by artificial intelligence (AI). Seri use the aplication of natural language processing (NLP). NLP is a subfield of AI that focuses on enabling computers to understand, interpret, and generate human language. Seri can understand and interpret user queries and respond with appropriate answers, providing users with personalized and efficient customer service. Similar to Seri is Google Assistant also using NLP to help regcognise voice and give responses.

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

Hardware accelerators like CPUs, GPUs, FPGAs, and ASICs are designed for machine learning tasks.

-The Da Vinci Architecture: This is the core architecture of the Ascend AI processors. It is designed to be highly efficient in both performance and power consumption, with a focus on delivering high compute density and low latency for deep learning tasks.

-The Compute Module: This module contains the core processing unit of the Ascend AI processors, including the AI cores and the vector processor. The AI cores are responsible for executing the compute-intensive operations involved in deep learning, while the vector processor is used for scalar operations and control logic.

-The Memory and Storage Module: This module is responsible for providing the high-bandwidth memory and storage required for deep learning tasks. It includes a large on-chip SRAM cache, as well as support for high-speed external memory and storage devices.

-The Interface Module: This module provides the interface between the Ascend AI processors and other components of the system, such as the host CPU and external memory and storage devices. It includes a high-speed PCIe interface, as well as support for other standard interconnects.

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

One of the major trends in AI is the continued growth of deep learning, which is a machine learning technique that involves the use of neural networks with multiple layers. Deep learning has shown remarkable success in various fields, especially such as image recognition, natural language processing, and speech recognition, and it is expected to continue advancing in the coming years.

There is also growing interest in explainable AI, which aims to provide transparency and accountability in AI systems. Explainable AI algorithms enable humans to understand how AI makes decisions, which is important for applications where decisions can have significant consequences, such as in healthcare, finance, and law.