QUESTION:

What is the difference between AI, Machine Learning and Deep Learning?

Artificial Intelligence, Machine Learning, and Deep Learning are gaining prominence in businesses. However, the terms are often used interchangeably. So, what's the difference between Artificial Learning, Machine Learning and Deep Learning?

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Artificial Intelligence:

AI can be thought of as advanced computer intelligence. In AI, every aspect of intelligence can be so precisely defined that a machine can be programmed to simulate it.

Machine Learning:

Machine Learning is a sub-discipline of Artificial Intelligence. The core of Machine Learning revolves around a computer system consuming data and learning from the data. Once trained on large data sets, the system can be leveraged to perform a myriad of tasks ranging from natural language processing to predicting outcomes to proactive/preventive maintenance. In traditional programming, a computer system completes tasks based on instructions whereas in Machine Learning, the system continuously learns from data and utilizes the knowledge to uncover patterns and make predictions.

Deep Learning:

Deep Learning is a branch of machine learning focused on algorithms called Artificial Neural Networks which tries to mimic the structure and functioning of the brain. As compared to traditional programming which uses a set of instruments to perform a task, Artificial Neural Networks use a network of nodes to recognize patterns. Many layers of software neurons are utilized to identity patterns of great complexity. Let's say you want a computer system to recognize an object. The Artificial Neural Network is blitzed with digital images containing those objects. Each individual layer of software neurons learns to recognize a specific feature. For example: the first layer may recognize primitive features like an edge in an image. Once the layer has successfully recognized a feature, it is fed to the next layer which trains itself to recognize more complex patterns like a corner in an image. This "divide and conquer" process is repeated in each layer until the system can reliably recognize the object.