

In simple terms, machine learning can be defined as teaching a machine, or computer, how to learn. By “learn” I am referring to predicting or adapting to output based on input. The benefit of machine learning is dependent on how we program the computers to deal with what it learns.

The importance of data, pattern recognition, and accuracy in machine learning closely relates these things together. When something is being analyzed it is often ‘data’ in statistical terms or input into a search engine. For example, even while writing this document, the text editor allows me to quickly press tab on my keyboard to finish the word or phrase because it understands what I want to say due to its text predictor. This is an instance of machine learning since the software has been trained to predict words. However, for more risky tasks that involve constant analysis then understanding patterns about data can also be efficiently done by machines since overly complex calculations can be done by machines at faster rates when compared to humans.

The relationship between AI (Artificial Intelligence) and machine learning is that both are ‘trained’ and intended to accomplish specific tasks that real humans could also be capable of.

Two examples of modern machine learning applications that could not be developed with traditional programming are chatbots and artificial intelligence generated art. Chatbots are designed to respond to a wide array of requests and can converse with actual humans. These chatbots can be designed to learn from previous interactions and data, with traditional code development not being enough to be able to respond or predict every response. Artificial intelligence generated art is a bit of a controversial topic nowadays, but these software's are trained to search for keywords and create art based on whatever you put into the request. For example, I could write “a pirate ship with a giant squid attacking it in dark murky waters” and it will create a new artwork within seconds comparable to real art.

Observation refers to an instance of a complete row of data and a feature is the actual column or specific data point in the row that is being referred to. Quantitative sounds like quantity which means it involves numeric data but qualitative which sounds like quality refers to non-numeric data that involves a single value from a specific set. The importance of these is crucial to data because they make up the analysis of tables and sets to help organize data. If a computer does not understand the difference between a numeric data set and something that describes something then it cannot help make correlations between points of interest.

My personal interest in machine learning stems from the fact that it automates so many things that would otherwise involve labor. I currently understand machine learning from the perspective of humans teaching machines how to learn but I also want to learn about how machines can teach other machines. That is an interesting thought for me due to how it would completely change the workforce. Imagine asking an artificial intelligence to create an entirely new software for me or have a bot train other bots with full conversations that can be observed and monitored.