Overview of ML

Machine learning is a part and combination of artificial intelligence, statistics, probability, and computer science. Also known as statistical learning, it can be defined as using technologies and algorithms to teach computers to replicate human abilities like pattern recognition, data analysis, and prediction.

Data is important because it is the source of all of our learned information. Pattern recognition is what allows us to know when things are similar and be able to classify them into groups, thus allowing us to classify unseen data. Furthermore, it's important that all of our findings and predictions through machine learning are accurate to prevent them from just being random guesses.

Machine learning is a part of artificial intelligence even though people tend to use them interchangeably. Machine learning is to do with technologies and algorithms that allow computers to do pattern recognition etc whereas artificial intelligence is to do with computers generally being able to replicate human abilities.

Two modern machine learning applications can be virtual assistants and voice/speech recognition. We can see both of these applications in virtual assistants like Siri. They are able to predict what questions you might ask and what data you are looking for based on your previous searches. Additionally, they are also able to recognize your voice. After recording a few sentences you have spoken to them, they can understand your speech techniques and mannerisms. Another example is the product recommendations we get while shopping online. This is done by tracking the products consumers search for, look at and add to their carts. This is all quite remarkable because in order to do this with traditional programming you would have to record yourself saying thousands of words and load thousands of your previous searches in order to get the same result.

Observation refers to acquiring information or is a row in a table of data also known as an example or instance. A feature is a column in a table of data or in other words a collection of the same type of data from different observations. Quantitative data is generally of a numeric type whereas qualitative is categorical data. In machine learning, these can be fed into models and used for predictions.

As an aspiring Data Scientist, Machine Learning is a very important part of my education. It is a rapidly growing field and is used across the board in various industries. It is also an extremely in-demand skill in the job market. I would like to learn about machine learning for personal projects as well as for professional applications.