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Machine Learning uses AI and a lot of input data to make accurate predictions about outcomes without being explicitly told to do so. The use of data to accurately recognize patterns in machine learning is important because it allows companies or other entities to view trends or patterns based on a large amount of data given. The automation of this operation means it does not require any human intervention and that the artificial intelligence will continuously improve. There is a wide variety of applications for machine learning, which is growing every year, such as estimating disease breakthroughs, or making predictions on pandemics such as COVID-19. This shows that the usefulness of machine learning is always evolving and changing to help societies future needs. The relationship between machine learning and AI is that machine learning is the part of AI that allows it to autonomously learn from data without explicitly telling it to. Two examples of machine learning applications include self-driving cars and AI chess bots. It is not possible to program self-driving cars or chess bots using traditional programming because there are far too many possible outcomes to account for. Machine learning cuts out planning for all the outcomes by learning and teaching itself how to account for those outcomes.

Observation is the process of observing something in order to gather information about it such as a feature, which is a distinct attribute of what's being observed. The data gathered could be quantitative, meaning numeric such as how many or how often, or qualitative, meaning a non-numeric description, such as a name. For example, given a large list of names, machine learning could automatically determine the most and least common names, and how those names have over the years of new students.

My personal interest in machine learning mostly revolves around how AI can take in loads of data and make autonomous interpretations of that data. For example, if given data about COVID-19 and outbreaks, machine learning could determine where outbreaks are likely to occur and where it is more likely to take place at. This could also be professionally used by businesses to track which products people buy more or less which can drastically help with a company's sales. I also do not know a lot about machine learning in general so I am excited to learn about how it all works and how to make it happen.