Ally de Vera

AMD190012

CS 4375

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Portfolio Assignment

a. Machine Learning is a way for computers to recognize patterns and from that, make predictions

b. in a paragraph, summarize the importance of data, pattern recognition, and accuracy in machine learning

We need data because we are unable to learn without any previous data, all new inferences and predictions are made from previous data in any field, not just data science. From that data we recognize patterns which lead us to these conclusions. Without accuracy we cannot make any reliable prediction, ideally, we learn from a learn from a sample that is well rounded and closely matching the whole population (i.e. we wouldn't survey just Texas, New York, and California for a study that is supposed to represent the US population) so that when we aren't drawing any false conclusions from them and during the learning process for the program, we can gather more information to draw these more accurate conclusions.

c. Artificial Intelligence is a part of Machine Learning, AI is the face while ML is the brain, the reason AI is so user friendly is because of all the information it has gathered from machine learning.

d. Siri wouldn't be able to understand what people are saying without rounds of interpreting and learning from different accents and phrasings from hundreds if not thousands of people. TOBORs wouldn't be able to safely go across campus if it couldn't tell the difference between a human and a tree, or a car and a building, which he knows the difference between from seeing and identifying them through the processes of machine learning.

e. In a paragraph, define the terms observation, feature, quantitative data, and qualitative data and discuss their importance in machine learning

An observation, a row, is one complete set of data for one subject, like a person's name, age, height, weight, and gender for example. We need a large sample of these rows in order to make any possible predictions. A feature, a column, would be one of the variables of the data set, like age. If we see that there is a strong correlation between these two features we can use one to predict the other. Quantitative Data is a feature that is defined numerically (quantity), and Qualitative data is a feature that is defined by a category (quality). These are both important because, if we can see that Male and Females have separate but both strong correlations, i.e. height and weight correlations would differ, but height and weight have a weak correlation

without separating out by gender. We can learn more by breaking down the data by our qualitative variables

f. I have a strong passion for statistics and computer science and ML is the perfect medium for the two for me. In my personal life I'm currently a personal trainer with specializations in women's health specifically and my goal after college is to create an application for women that aids in their workouts and lifestyle based on their menstrual cycles and this app would need to adjust based on those specifications and preferences.