CS4375.003

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1. define ML in your own words

Machine learning is a machine implementation of the process of learning as humans grow up. Society gives humans a large amount of data and teaches them how to utilize it. Machine learning is to apply the same process to machines. Humans give machines large amounts of data, analyze them, and induce them to apply to similar types of data.

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

Machine learning is a concept in which machines study like humans with data. Therefore, as humans do, data is needed to study. In addition, when humans analyze data for learning, they utilize the tendency of data. Tendency is the pattern, and the key to analyzing data. Therefore, pattern recognition is important because it finds the key to analyzing data. If you have found the key, you can use it only when the key is correct. Therefore, accretion is a very important concept to utilize the given data. An inaccurate analysis is meaningless.

3. describe the relationship between AI and ML

Artificial intelligence means that human-made programs have similar intelligence to humans. In order to implement human-like intelligence, researchers chose a method that allows machines to learn as humans do and draw conclusions on their own. This is machine learning. Therefore, machine learning is not artificial intelligence, but a technology for creating artificial intelligence.

4. list at least 2 examples of modern machine learning applications, and explain why these application could not be built with traditional programming

First, we use machine learning on voice recognition programs. This is because rules cannot be entered in advance for countless ways in which a person pronounces a word. In addition, even if the sound is changed into a word, it is necessary to understand what the words mean so that the user can enter the exact word intended. It uses machine learning because it can only take a lot of effort to implement it in a traditional programming manner.

Second, there is artificial intelligence in chess or go. The characteristic of such board games is that the standard movement and the path outside the standard exist at the same time, and the patterning is complicated by humans. Machine learning is used because it is difficult to program in advance for numerous cases.

5.   In a paragraph, define the terms observation, feature, quantitative data, and qualitative

data and discuss their importance in machine learning

We can view a data set as a form of table. In the table, we have rows and columns. In machine learning, we call row as observation and columns as feature. Each data is a observation and they have several features, and group of data forms a table. Quantitative data is form of data which is continuous or numeric, such as GPA or temperature. Qualitative data is data which only takes one of a finite set of values, such as gender. In machine learning, we deal with huge data sets and therefore we need to classify which part of data we will going to use, Quantative/ Qualititative isn't only a division, but also a sign of way to use data.

6.   write a paragraph describing your personal interest in ML and whether/how you would

like to learn more about ML for personal projects and/or professional application

Modern society prefers to extract facts from vast amounts of data rather than theoretical analysis through a few lines of formulas. In this tendency, even trivial things are expected to be predicted through data soon. So I want to learn machine learning more deeply by paying attention to usability. It is because it aims to study such technology in a society where the demand for technology using machine learning is expected to increase. To this end, looking beyond the undergraduate level is necessary; therefore, I desire to learn more about machine learning.