Francisco Trejo
1/28/2023
CS 4375.004
Karen Mazidi

Overview of ML

Machine Learning is the way a machine is able to collect data, analyze it, and make predictions out of it. It's teaching a machine in a way how to think like a human and make decisions based on given data. That's why data, pattern recognition, and accuracy in machine learning is so crucial since those are the building blocks that machine learning is built on. Taking in data and knowing how to read it then finding patterns in that data that can accurately predict future outcomes. Accuracy is important in machine learning because the applications that use machine learning algorithms may be life and death scenarios. Like self-driving cars that use machine learning to prevent a collision that can put a driver at risk.

Machine learning is how AI gets its intelligence. It's the machine learning algorithms that make AI process data and make rational decisions. Different types of applications that use machine learning are self-driving cars and media content like Youtube. Applications like these take data like speed and video selections and make decisions like stopping the vehicle and recommending other videos based on previous selections. Traditional programming cannot be used because with traditional we have to keep telling it to do something but with machine learning it learns and makes the decisions on its own. A car has to learn the difference between a wall or just an insect when it comes at it or when a passenger is falling asleep at the wheel. Youtube has to learn which videos a person may like based on the qualitative data it may receive from the user's selections and accurately recommend videos to the user. Traditional programming can only do so much and needs machine learning to make computers and applications smarter.

There are two types of data: one is qualitative data that is more descriptive and is finite like a string and then there is quantitative which is numeric like an integer. These are important to machine learning because that means you can have different types of data and categorize it which helps with organization and faster processing. Then in data you have a column which is a feature or sometimes called an attribute. These attributes have to have the same data type and help see the variations and limitations of a specific attribute from the data. Then you have an observation which is sometimes called an instance which is a row of data that has a different variety of attributes with different data types. These are important in machine learning because different instances can be selected for processing and that reduces the amount of information to process making things fast and easy. This also makes data collecting more diverse since you can process different clusters of datasets.

The thing that interested me about machine learning is the relationship it had with Artificial intelligence. I always wanted to know how to trick a computer into thinking for itself since I always saw it in science fiction movies. I always saw it as the future and it's becoming reality. It would be amazing to be part of the next technological advancement in AI. That being said I would like to learn about it for professional applications and want to learn more hands on by looking at machine learning code and really understanding to further my professional career.

GITHUB Portfolio:

https://ftrejo2013.github.io/Class_Portfolio/