

Overview of ML

- a. Machine learning to me is the ability for a computer to find correlations with past events to help predicate future occurrences. Similar in the way a human uses their experiences to solve complex problems. Imitating human behavior in this way can allow a machine to handle these problems for the human.
- b. Data, pattern recognition, and accuracy provide the information and measurables to be able to tell how well a machine learning algorithm is able to provide the services it was intended to. The data can be a set of test data to confirm accuracy and it can also provide the data the system will need to draw on to learn patterns to recognize. This pattern recognition will determine the algorithm's accuracy and whether the process is successful.
- c. Machine learning is a subfield of artificial intelligence. Artificial intelligence encompasses the learning of the machine and the real-world application of the algorithms. Machine learning provides the foundation of the applications of artificial intelligence that will use the algorithm.
- d. Agriculture uses machine learning to minimize the overall losses in production. This can not be done with traditionally programming as it requires a system to predict outcomes where many outcomes are possible. Using all the same data we have collected about parameters of soil, seed quality, fertilizer applications, pruning, genetic and environmental conditions and irrigation and allowing a machine to predict outcomes. While we have gotten agriculture down to a science it can still be improved by machine learning.

Healthcare also uses machine learning in several areas. One area is the analyzing of medical imaging devices like X-rays and MRI scans. A qualified medical professional would typically look at these and try to find abnormalities. Using ML to scan these images for abnormalities that it has learned and finding correlations can help assist medical professionals in finding diseases.

- e. Observation – Are the data points collected about a given variable. These provide the base line of information for the algorithm to learn from. This information is vitally important to the accuracy of the algorithm.

Feature – Simply an input variable. These help to identify individual measurable characteristics of a data set.

Quantitative data – data expressed as numbers. ML can take this information and do anything that can be done with a number.

Qualitative data – data expressed as types of data. (Species, colors, etc). This information must be handled differently in Machine learning as it often only pertains to certain things.

- f. Machine Learning is interesting to me in that I can use it to simplify life and to answer questions that I want to answer to. This may be as simple as a curiosity or to help in a financial way. I would like to use ML to provide a food diet for myself using all the personal information on me. This diet would be incredibly specific for me and would include habits, physical activity, stresses and so on.**

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