

Overview of ML

- a. Machine learning can be defined as guiding a machine to recognize patterns with data.
- b. Data is key to creating a good model from the machine learning algorithms. Pattern recognition from the data is important because machines can recognize specialized patterns faster and easier than a human mind leading to knowledge about the topic being analyzed. Accuracy in machine learning is important because an inaccurate model does not provide a solid prediction.
- c. Machine learning is mostly focused on how accurately a machine learns from data, whereas artificial intelligence is more based on the application of machine learning and how well a machine performs an intelligent task.
- d. One scenario in which machine learning is useful is in the area of facial recognition. Facial recognition realistically can not be done with traditional programming because it is hard to quantify and create an algorithm that accurately and reliably is able to recognize the same face in different pictures. Another modern application would be sentiment analysis. This is also realistically impossible to do in traditional programming because the algorithm needed to calculate the sentiment from sentences would be impractical.
- e. An observation is a sample data point which is important because we would use ML to recognize patterns about these data points. A feature is a category for the data in which we are using which is important because the data needs to be categorized to be useful. Quantitative data is a type of feature that is numerical which is important because a lot of data is based on numbers such as the temperature. Qualitative data is less numerical data and more categorical. Qualitative data can only take on one of a finite set of values which is important because a lot of data is categorical based such as a student's major.
- f. I personally am not too interested in ML, however, I am hoping this class changes that. I would like to learn about machine learning through the application of the theories and materials learned from the class.