Machine learning is a system that has one algorithm to produce an output as well as a separate algorithm to change the first algorithm based on training data.

Without data, machine learning is ineffective. Machine learning learns by finding patterns in the data that a person may not have noticed. Accuracy is important because an inaccurate algorithm is unhelpful.

Artificial intelligence is any algorithm that simulates intelligence, but machine learning is an algorithm that can learn and get better over time.

The main types of machine learning I have seen are for image recognition and to play a game. You would not be able to create a program to create a traditional algorithm to label items in an image because it's not something a person can fully explain. An algorithm to play a game can be explained, but only the the level of skill of the player. In complex games like Chess or Starcraft, the amount of options and strategies is far too large to possibly create an algorithm that analyzes them all.

An observation is any instance of data to be used to train an algorithm. The features are the individual pieces of data within an observation. Quantitative data is data with numbers, such as temperature. Qualitative data is data with categories, such as color. The different types of data require different algorithms to utilize.

My personal exposure to machine learning has been through the context of video games, particularly from OpenAI and DeepMind. These AIs are better than some of the best players in the world, and I've always found them very interesting. I would like to eventually be able to create an AI to play some other video games I've played.