Artificial Intelligence is the effort to automate intellectual tasks normally performed by humans.

AI can be simple or complex.

Machine Learning figures out the rules for us.

The goal for ML models is to get the highest accuracy as possible

ML summary is that rather than giving the program the rules an algorithm finds the rules for us.

Neural networks or deep learning.

Neural network is a form of ML that uses a layered representation of data.

A **deep neural network** (DNN) is an artificial **neural network** (ANN) with multiple layers between the input and output layers. The DNN finds the correct mathematical manipulation to turn the input into the output, whether it be a linear relationship or a non-linear relationship.

Feature is more the input we give to a model. Features give labels

Label is the output what we are looking for.

Data is info needed to make a model.

Different types of ML

Unsupervised, supervised and reinforcement learning

Supervised learning: **Supervised learning** is the **machine learning** task of **learning** a function that maps an input to an output based on example input-output pairs. It infers a function from labelled **training** data consisting of a set of **training** example.

Unsupervised learning: **Unsupervised learning** is a type of **machine learning** algorithm used to draw inferences from datasets consisting of input data without labelled responses. The most common **unsupervised learning** method is cluster analysis, which is used for exploratory data analysis to find hidden patterns or grouping in data.

Reinforcement learning: **Reinforcement learning**, in the context of artificial intelligence, is a type of dynamic programming that trains algorithms using a system of reward and punishment. A **reinforcement learning** algorithm, or agent, learns by interacting with its environment.