Application of Machine Learning.

1. Classification type : If the output variable is discrete value (for instance male, female .... etc.) we can say that is supervised learning belongs to classification type. Some of its application given below -

(a) Email - Spam classification : whenever we receive a new email, it is filtered automatically as import normal, and spam. We always receive an important mail in our inbox with the important symbol and spam emails in our spam box, and the technology behind this is Machine Learning.

Some machine learning algorithm such as Multi-Layer Perception, Decision tree and Naive

Bayes classifier are used for email spam filtering and malware detection.

(b) Image Classification: Image classification assigns previously trained categories to a given image. These could be the subject of the image, a numerical value, a theme etc. Using supervised learning algorithm, we can tag images to train our model for appropriate categories. As with all machine learning models, the more we train it, the better it will work.

(c) sentiment analysis: sentiment analysis is a machine learning text analysis technique that assigns sentiment (opinion, feeling or emotion) to words within a text, or an entire

text on a polarity scale of Positive, Negative or Neutral.

Some other ~~example of~~ application of Classification type are ~~face et~~ plant ~~species~~ species classification, Optical character recognition etc.

2. Regression : If the output variable is a continuer value (for instance weigh, heigh etc), we can say that supervised learning belongs to Regression problem.

(a). Stock Market trading : Machine Learning is widely used in stock market trading. In the stock market, there is alway a risk of up and down in shares, so for this machine learning's dong short term

memory neural network is used for the prediction of stock market trends

(b) Weather forecasting: Weather forecasting is the application of scientific techinques and technology to predict the condition of atmosphere at a certain location and time.

(c). Human Population Growth: Human population growth plays a key role in any regional planning. In many data constraint environment, it is not possible to collect the required the demographic data to predict the human population growth rate.

3. Clustering : In such problem, it is group the given data upon various conditions. Such analysis in used in education field to cluster students. Some applications are given below-

(a) Grouping of shopping items : clustering can be used to group all the shopping item available on the web a set of unique product.

(b) Natural Language processing : clustering can be used to resolve lexical ambiguity. NLP Generally use unsupervised - text - clustering.

(c) Recommender systems : Recommender systems are designed to recommend new item based on a user's tastes. They sometimes use clustering algorithms to predict a user's pref-

erence based on the preferences of other users in the user's clusters.

4. Association: In such problem, it will discover relationships in the given data set.

(a) Medical Diagnosis: With the help of association rules, patients can be cured easily, as it helps in identifying the ~~prob~~ probability of illness for a particular disease.

(b) Protein Sequence: The association rules help in determining the synthesis of artifical poteins.

(e) Market Basket Analysis: It is one of the popular examples and applications of association rule mining. This technique is commonly used by big retailers to determine the association between items.