----------Glossary----------

Underfitting: less amount of training data -> less throughput

Overfitting: more amount of training data -> limited throughput

Generalized model: maximized training data -> optimized throughput

Hyperparamters: if small change in parameter , will reflect as large change in throughput

Filter: collection of neurons

----------ML project Step by Step----------

-Install python and Scipy platform

-Loading dataset.

-Summarizing dataset.(dim,attr,..)

-Visualizing dataset.

-Evaluating some algorithms.(apply algorithm)

-Making some predictions.

Project: To classify iris type based on sepal and petal measurements---------

-Required Libraries:

SciPy- mathematic operations

NumPy-matrix/vector operation

matploitlib- to visualize dataset(graphical)

pandas- file operations

ScikitLearn- all ML/datamining libraries

-Train data= 120 rows (80% of dataset)

-Test data=30 rows(20% of dataset)

-For multivariate relation:(for reading graphical representation)

trend->increasing or decreasing mode

shape->linear,parabola

strength->strong,moderate

----------**DL ----------**

ANN (artificial neural network)

-Linearly separable problems (can separate classes with one line) **-> Perceptron** (single later perceptron-forward pass)

-Non-linearly problems (cannot) **-> Back propagation** (multilayer perceptron-forward and back pass)

-cannot work with picture data computer vision (many inputs for first layer->over fitting)

CNN (convolutional neural network)

-dimensionality reduction

-top->bottom, left->right

-piece by piece (filter) matching

-layers:

Convolution (filters), ReLu layer (activation func), Pooling(reduce dims) , Fully Connected(one dimension matrix)

CNN STEPS:

-line up filter and image

-multiply each Image pixel by the corresponding filter pixel

-add them up

-divide total number of pixels in the filter