

# Exploring The Deep learning Techniques

## Platforms

Various deep learning platforms

Google colab:-

free online jupyter Notebook with

GPU/TPU

- Ideal for students, researchers, hobbyist
- \* Accessible with Google colab account

Jupyter Note book:-

- Not a framework, but an interactive coding environment.
- Peculiar for exploration, visualization tutorials

Key Difference b/w Google colab & Jupyter

Google colab

- Cloud based platform
- Built-in free GPU/TPU
- Runs in browser
- Save to google drive

Jupyter Notebook

- Local / browser-based
- GPU manual setup
- A separate + Jupyter - installation
- Manual file storing
- Save to local system

Key frameworks of Python, TensorFlow

Tensorflow:-

Creator / organisation : Google (2015)

main feature :- scalable across CPUs, GPUs

High performance model

# Integrated keras API for simplicity visualization

Exp. 2

Tensor Board

Popular use case:- computer vision

NLP

ML

PyTorch:-

Organizations :- facebook AI research [FAIR] (2016)

Main feature:- dynamic computational graph

Natural imperative syntax

Strong GPU accelerating support

Popular use cases:- Research & Academic projects

NLP models

fast model prototyping

graph type :- Dynamic

CODING:-

- ① `pip install tensorflow` - for installations  
    > tensor flow Keras - high level for building models  
    > tensor flow-hub - pre trained models.
- ② `pip install torch torchvision torchaudio`  
    > torchvision - Image data set  
    > torch text - NLP & Text based layer  
    > torch audio - A video processing

Conclusion:-

A analysed various platforms and  
frame work in deep learning

# Implement a classifier using op

Aim:-

To implement a KNN classifier

dataset

Objective:- Pseudo code:-

To analyse the step by step work flow of the algorithm

Pseudocode / Algorithm:-

1. Install and import the library
2. Load data set.
3. Split the data into training and testing
4. Create the KNN classifier
5. Train the model
6. Make prediction
7. Evaluate model

Observation:-

In this Iris dataset  
Neighbour algorithm (K=3)  
when

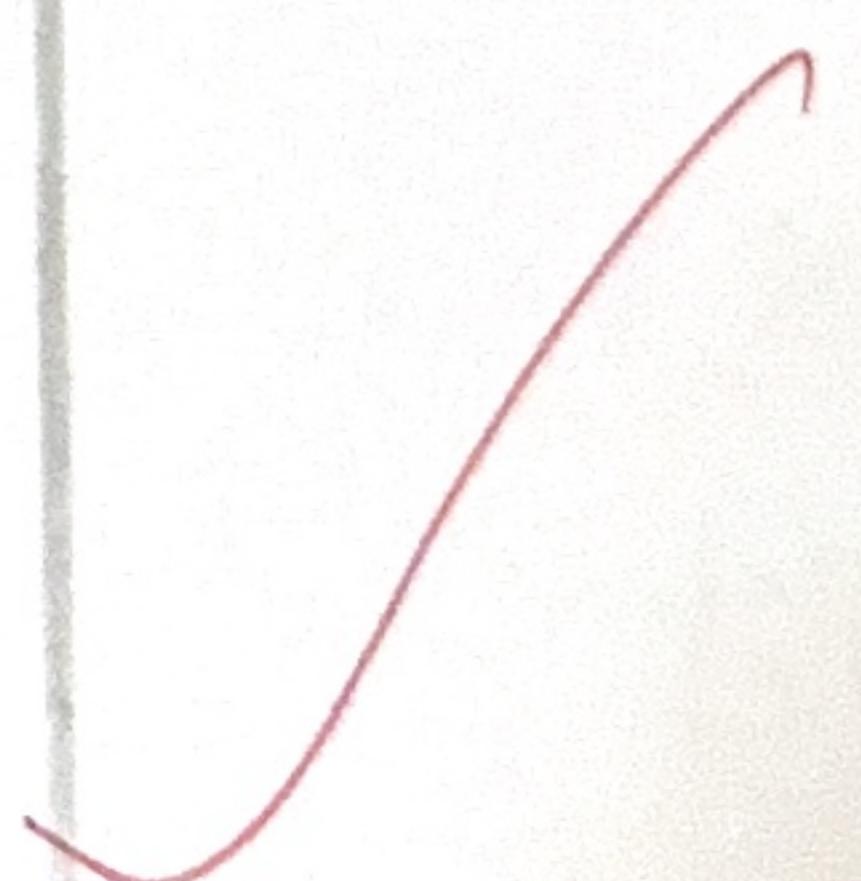
split the data using

80:20 ratio

Normalize feature

sepal length - 4

peta length - 4



Exp:-2

## Implement a classifier using open source

Aim:-

To implement a KNN classifier using IRIS dataset

Objective:- Pseudo code :-

To analysis the statistical parameters and work flow of the algorithm

Pseudocode / Algorithm:-

1. Install and import the libraries.
2. Load data set.
3. Split the data into training & test sets.
4. Create the KNN classifier.
5. Train the model.
6. Make prediction.
7. Evaluate model.

Observation:-

In this Iris dataset I used K-nearest Neighbors algorithm (KNN).

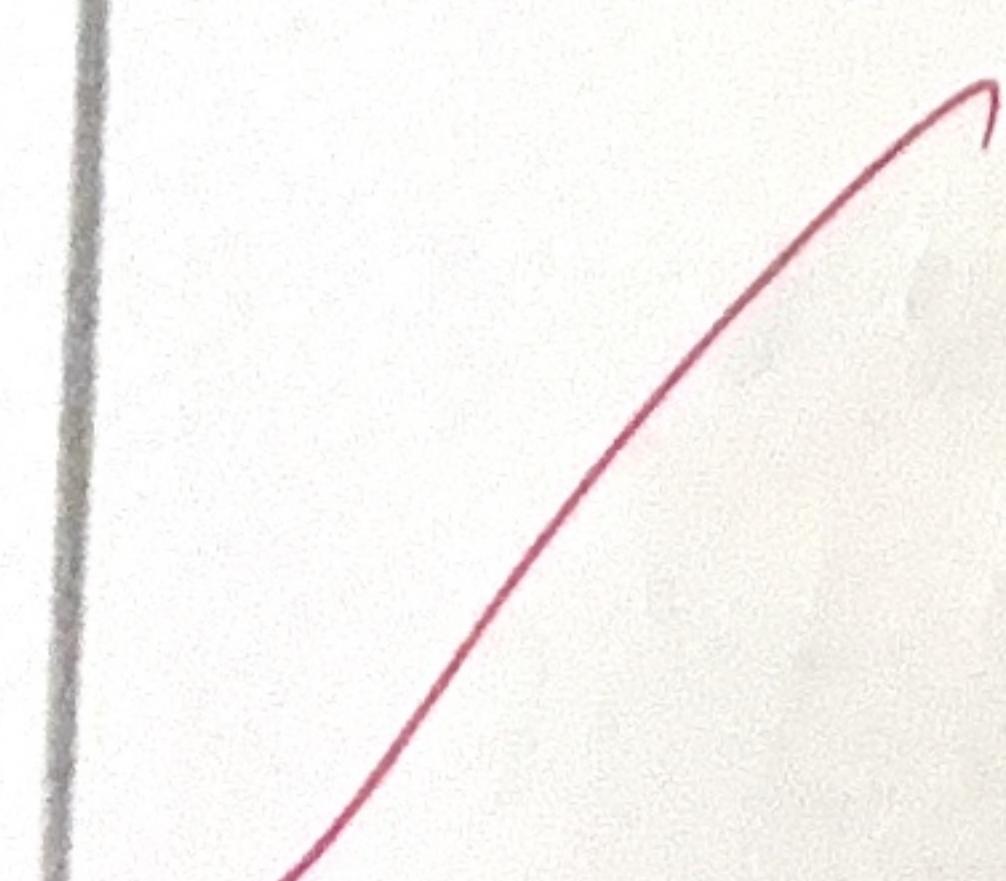
where,  
split the data using sklearn

80: 20 ratio.

Normalize feature in the data set

sepal length - 4.3 to 7.9 (in cm)

peta length - 1.0 to 6.9 (in cm)



Result :- SVM classifier is successfully implemented and tested using an open source (tilde) dataset accuracy 0.99

macro avg 0.99

weighted avg 0.99

~~etc, etc~~