LIST OF 6 LIBRARIES OF PYTHON

1. **NumPy**

   NumPy stands for Numerical Python. NumPy is a python library used for working with arrays. It is used to perform various mathematical operations on arrays.

   NumPy is an open source library, also it is easy to use and interactive. It also has functions for working in domain of linear algebra, fourier transform, and matrices.

2. **Pandas**

   Pandas is a fast, powerful, flexible and easy to use open source data analysis and manipulation tool, built on top of the Python programming language. It is mainly used in machine learning to provide data structures of high-level and a wide variety of tools for analysis. It allows importing data from various file formats such as comma-separated values, JSON, SQL, Microsoft Excel. It allows various data manipulation operations such as merging, reshaping, selecting, as well as data cleaning and data wrangling features.

3. **Matplotlib**

   Matplotlib is a comprehensive library for creating static, animated and interactive visualizations in Python. It is a plotting library for the Python programming language and its numerical mathematics extension NumPy. It provides an object-oriented API for embedding plots into applications. Pyplot is a Matplotlib module which provides a MATLAB-like interface. Matplotlib is designed to be as usable as MATLAB, with the ability to use Python, and the advantage of being free and open-source.

4. **SciKit-Learn**

   Scikit-learn (also known as sklearn) is a free software machine learning library for the Python programming language. It is simple and efficient tools for predictive data analysis. It is built on NumPy, SciPy and matplotlib. The library is focused on modeling data. It is not focused on loading, manipulating and summarizing data.

   Some popular groups of models provided by scikit-learn include:

   - **Clustering**: for grouping unlabeled data such as KMeans.
   - **Cross Validation**: for estimating the performance of supervised models on unseen data.
   - **Datasets**: for test datasets and for generating datasets with specific properties for investigating model behavior.
   - **Feature extraction**: for defining attributes in image and text data.
   - **Feature selection**: for identifying meaningful attributes from which to create supervised models.

5. **Tensorflow**

   TensorFlow is an end-to-end open source platform for machine learning. It has a comprehensive, flexible ecosystem of tools, libraries and community resources that lets

researchers push the state-of-the-art in ML and developers easily build and deploy ML powered applications. It leverages various optimization techniques to make the calculation of mathematical expressions easier and more performant.

Some of the key features of TensorFlow are:

- Efficiently works with mathematical expressions involving multi-dimensional arrays
- Good support of deep neural networks and machine learning concepts
- GPU/CPU computing where the same code can be executed on both architectures
- High scalability of computation across machines and huge data sets

6. Keras

Keras is a neural networks library written in Python that is high-level in nature – which makes it extremely simple and intuitive to use. It works as a wrapper to low-level libraries like TensorFlow or Theano high-level neural networks library.

Salient features of Kera are as follows:

- Keras is a high-level interface and uses Theano or Tensorflow for its backend.
- It runs smoothly on both CPU and **GPU**.
- Keras supports almost all the models of a neural **network** – fully connected, convolutional, pooling, recurrent, embedding, etc