**PACKAGES IN PYTHON:**

**1. NumPy**

NumPy is a popular Python library for multi-dimensional array and matrix processing because it can be used to perform a great variety of mathematical operations. Its capability to handle linear algebra, Fourier transform, and more, makes NumPy ideal for machine learning and artificial intelligence (AI) projects, allowing users to manipulate the matrix to easily improve machine learning performance. NumPy is faster and easier to use than most other Python libraries**.**

**2. Scikit-learn**

Scikit-learn is a very popular machine learning library that is built on NumPy and SciPy. It supports most of the classic supervised and unsupervised learning algorithms, and it can also be used for data mining, modeling, and analysis. Scikit-learn’s simple design offers a user-friendly library for those new to machine learning.

**3. Pandas**

Pandas is another Python library that is built on top of NumPy, responsible for preparing high-level data sets for machine learning and training. It relies on two types of data structures, one-dimensional (series) and two-dimensional (DataFrame). This allows Pandas to be applicable in a variety of industries including finance, engineering, and statistics. Unlike the slow-moving animals themselves, the Pandas library is quick, compliant, and flexible**.**

**4. TensorFlow**

TensorFlow’s open-source Python library specializes in what’s called differentiable programming, meaning it can automatically compute a function’s derivatives within high-level language. Both machine learning and deep learning models are easily developed and evaluated with TensorFlow’s flexible architecture and framework. TensorFlow can be used to visualize machine learning models on both desktop and mobile.

This project-based [TensorFlow specialization](https://www.coursera.org/specializations/tensorflow-advanced-techniques) from DeepLearning.AI is perfect for anyone ready to deep-dive into applied machine learning. Customize ML models with four hands-on courses:

**5. Seaborn**

Seaborn is another open-source Python library, one that is based on Matplotlib (which focuses on plotting and data visualization) but features Pandas’ data structures. Seaborn is often used in ML projects because it can generate plots of learning data. Of all the Python libraries, it produces the most aesthetically pleasing graphs and plots, making it an effective choice if you’ll also use it for marketing and data analysis.

**6. Theano**

Theano is a Python library that focuses on numerical computation and is specifically made for machine learning. It is able to optimize and evaluate mathematical models and matrix calculations that use multi-dimensional arrays to create ML models. Theano is almost exclusively used by machine learning and deep learning developers or programmers.

**7. Keras**

Keras is a Python library that is designed specifically for developing the neural networks for ML models. It can run on top of Theano and TensorFlow to train neural networks. Keras is flexible, portable, and user-friendly, and easily integrated with multiple functions.

**8. PyTorch**

PyTorch is an open-source machine learning Python library based on the C programming language framework, Torch. It is mainly used in ML applications that involve natural language processing or computer vision. PyTorch is known for being exceptionally fast at executing large, dense data sets and graphs.

**9. Matplotlib**

Matplotlib is a Python library focused on data visualization and primarily used for creating beautiful graphs, plots, histograms, and bar charts. It is compatible for plotting data from SciPy, NumPy, and Pandas. If you have experience using other types of graphing tools, Matplotlib might be the most intuitive choice for you**.**