**Python Libraries**

**Pandas:**

**Pandas** (with reference to “Panel Data” and “Python Data Analysis”) is one of the python libraries that enables working with large data sets. It has functions that allow analyzing, cleaning, exploring and manipulating data. Thus, it is a prominent python library for data analysis and data science. A list of few things that pandas is very useful for are as under:

1. Handling of missing data in the data set
2. Data alignment
3. Merging and joining data sets
4. Labeling, slicing, indexing and sub-setting large data sets

**Numpy:**

**Numpy**, which stands for Numerical Python, is also a python library used for working with arrays. It has functions that allow working faster than traditional Python lists of arrays. It is a large collection of mathematical functions, matrices and multi-dimensional arrays. Numpy provides tools for wide applications in data science and machine learning.

**TensorFlow:**

Developed by the Google Brain team, TensorFlow allows development, training, and deployment of machine learning models. TensorFlow makes it easy to create ML models that can run in any environment, with a strong emphasis on deep learning and neural networks.

TensorFlow is used for the following applications:

1. Image and video recognition systems
2. Sentiment analysis
3. Machine translation
4. Chatbot development
5. Developing AI agents
6. Predictive analysis
7. Fraud detection
8. Algorithmic trading
9. Risk management

Hence, TensorFlow has proved itself as a central tool for AI development and machine learning. Further, it proves to be a valuable tool for healthcare industry, financial industry, production and manufacturing, marketing and multiple other industries.

**Keras:**

Keras, a simple, user-friendly, and consistent API allows developers to build deep learning models quickly and, with less cognitive load and code. Keras is commonly used for building neural networks useful for medical imaging and facial recognition. It is also suitable for sentiment analysis and language translation. Furthermore, Keras is also used for time series forecasting and sequence prediction that is highly applicable for industries such as finance, and weather forecasting and signal processing.

**Sklearn:**

Sklearn, short for Scikit-Learn is one of the open-source libraries for python which enables data mining and data analysis operations. Sklearn provides a wide range of algorithms for:

1. Classification and regression processes
2. Clustering applications
3. Visualization tasks
4. Data preprocessing
5. Construction of pipelines for consistent application of transformations

**PyTorch:**

PyTorch mainly used in academic research and for implementing complex architectures, is an open-source deep learning framework developed for data handling, model building, data manipulation, building complex frameworks, and so on. Its flexibility, power and ease of use offer wide range of applications for academic research, computer vision research and development, natural language processing, reinforcement learning, medical imaging, drug discovery and various AI applications.