



Python Libraries

Libraries



A library is a collection of various packages. There is no difference between library and python package. Library is used to loosely describe a collection of core or main modules.

1

PYTHON LIBRARIES FOR STATISTICAL ANALYSIS



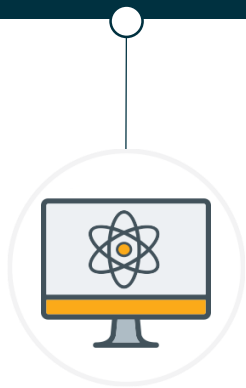
Libraries for Statistical Analysis

All Machine Learning and Deep Learning algorithms, techniques, etc are built on the basic principles and concepts of Statistics.

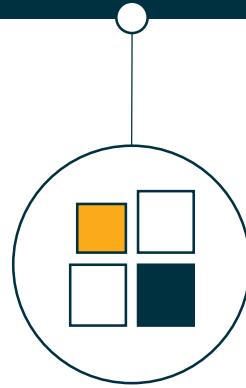




NumPy



Scientific
Computation



Multi-dimensional
objects



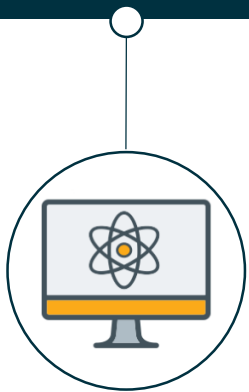
Data manipulation



Statistics for ML
Algorithm



SciPy



Mathematical
Computation



Provides a Collection
of Sub-Packages



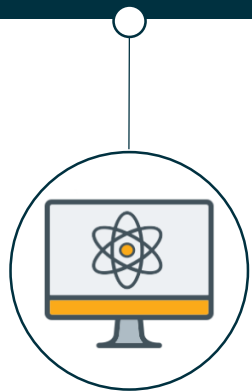
Advanced Linear
Algebra Functions



Support for Signal
Processing



Pandas



Data Frame Objects



Process Large Data
Sets



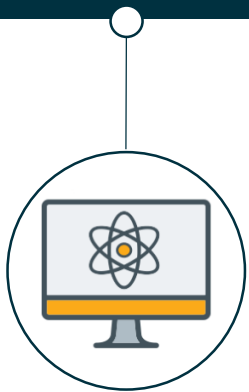
Complex Data
Analysis



Time Series Data



StatsModel



Statistical Tests



Support for R- style
Formulas



Implement
Generalised Linear
Models



Hypothesis Testing

2

PYTHON LIBRARIES FOR DATA VISUALIZATION



Libraries for Data Visualization

Data Visualization included the implementation of graphs, charts, mind maps, heat-maps, histograms, density plots, etc, to study the correlations between various data variables.



matplotlib

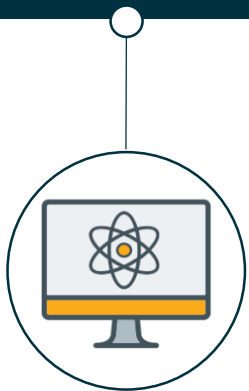
Seaborn

plotly

bokeh



Matplotlib



Plot a variety of
Graphs



Extracts Quantitative
Info



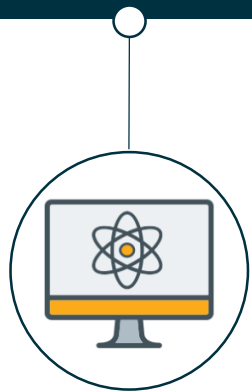
Pyplot Modules



Integrate with Tools



Seaborn



Compatible with various data formats



Support for automated statistical estimation



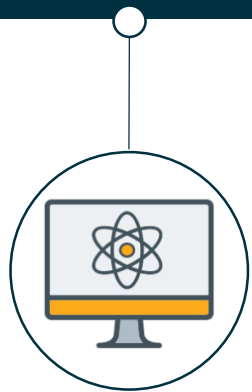
High-Level Abstractions



Supports for Built-in Themes



Plotly



Supports a collection
of Chart Types



Build Public/Private
Dashboards



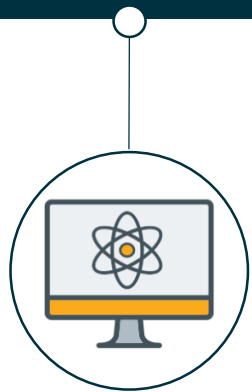
Access Graphs on
Variety of Platforms



In-built API for
Plotly Grid



Bokeh



Create Complex
Statistical Graphs



Supports Multiple
Language Bindings



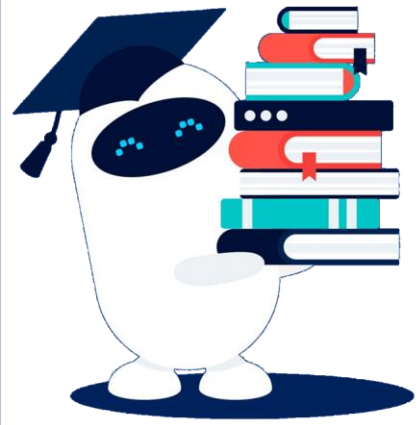
Integrations with
Flask & Django



Transform
Visualization for
other Libraries

3

PYTHON LIBRARIES FOR MACHINE LERNING



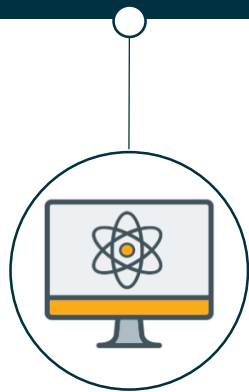
Libraries for Machine Learning

Machine learning libraries help in implementing the whole end-to-end ML process, which includes building a statistical model that predicts a precise outcome.





SciKit Learn



Provides a set of
Standard Datasets



Machine Learning
Algorithms

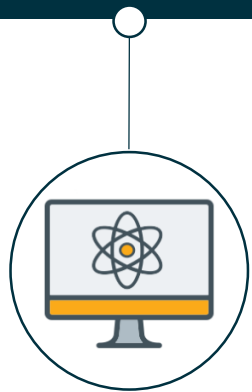


In-built functions for
Feature Extraction
& Selection



Model Evaluation

dmlc XGBoost



Fast Data
Processing



Supports Parallel
Computation



Provides Internal
Parameters for
Evaluation



Higher Accuracy

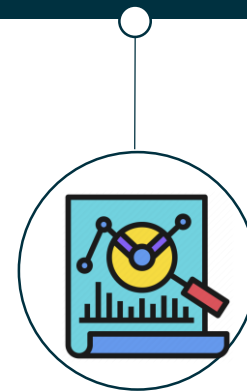
ELi5



Integration with
Scikit-learn



Explains Predictions
made by Classifiers/
regressors



Support for
inspecting black-
box models



Analyses Predictions from
general Linear Models