

NumPy

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Library: modules written in Python that provide standardized solutions for many problems that occur in everyday programming.



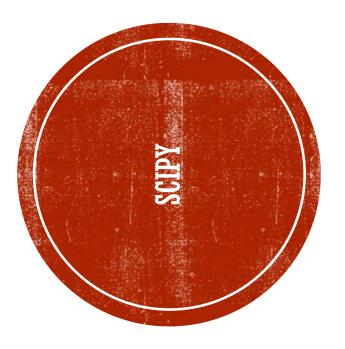
Libraries are not part of basic installation of PYTHON





NUMPY

- An open-source numerical Python library.
- Stands for Numeric Python or Numerical Python
- contains a multi-dimensional array and matrix data structures
- For numerical data, NumPy arrays are more efficient for storing and manipulating data than the other built-in Python data structures.
- Used to perform a number of mathematical operations on arrays such as trigonometric, statistical, and algebraic routines.
- Tools for reading and writing array-based datasets to disk
- The core of NumPy is well-optimized C code. Enjoy the flexibility of Python with the speed of compiled code.



Scientific Python is often mentioned in the same breath with NumPy.

needs Numpy, as it is based on the data structures of Numpy

extends the capabilities of NumPy with useful functions for minimization, regression, Fouriertransformation and many others



PANDAS

provides ready to use highperformance data structures and data analysis tools.

> an open source library in Python.

DataFrame is the key data provides a rich feature-set on structure in Pandas, that is used to store and manipulate tabular data as a 2-D data structure with both row and column labels etc.

Series is a one-dimensional labeled array object

has a higher-level interface and provides streamlined alignment of tabular data and powerful time series functionality.

> runs on top of NumPy and is popularly used for data science and data analytics.

Provides for two data structures viz. DataFrame and Series Handles merge and other

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Flexible handling of missing
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Handles merge and other relational operations found in popular databases (e.g. SQL-based)

MATPLOTLIB

the most popular
Python library for
producing plots and
other two-dimensional
data visualizations

originally created by John D. Hunter





general- purpose machine learning toolkit for Python programmers, like Classification: SVM, nearest neighbors, random forest, logistic regression, etc.

Regression: Lasso, ridge regression, etc.

Clustering



- 1. sudo apt-get update
- 2. sudo apt-get -y install python3pip
- 3. sudo pip3 install pandas
- 4. python3.4 -m pip install numpy OR sudo pip3 install numpy
- 5. pip3 install matplotlib