





Awesome Python

A Curated List of Awesome Python Frameworks, Libraries and Software

Professional Edition

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Awesome Python **!Awesome**(<https://github.com/sindresorhus/awesome>)

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Admin Panels

Libraries for administrative interfaces.

■ ajenti

The admin panel your servers deserve.

<https://github.com/ajenti/ajenti>

■ django-grappelli

A jazzy skin for the Django Admin-Interface.

<https://github.com/sehmaschine/django-grappelli>

■ flask-admin

Simple and extensible administrative interface framework for Flask.

<https://github.com/flask-admin/flask-admin>

■ flower

Real-time monitor and web admin for Celery.

<https://github.com/mher/flower>

■ jet-bridge

Admin panel framework for any application with nice UI (ex Jet Django).

<https://github.com/jet-admin/jet-bridge>

■ streamlit

A framework which lets you build dashboards, generate reports, or create chat apps in minutes.

<https://github.com/streamlit/streamlit>

■ wooyey

A Django app which creates automatic web UIs for Python scripts.

<https://github.com/wooyey/wooyey>

Algorithms and Design Patterns

Python implementation of data structures, algorithms and design patterns. Also see [awesome-algorithms](#).

* Algorithms

■ **algorithms**

Minimal examples of data structures and algorithms.

<https://github.com/keon/algorithms>

■ **python-ds**

A collection of data structure and algorithms for coding interviews.

<https://github.com/prabhupant/python-ds>

■ **sortedcontainers**

Fast and pure-Python implementation of sorted collections.

<https://github.com/grantjenks/python-sortedcontainers>

■ **thealgorithms**

All Algorithms implemented in Python.

<https://github.com/TheAlgorithms/Python>

* Design Patterns

■ **pypattyrn**

A simple yet effective library for implementing common design patterns.

<https://github.com/tylerlaberge/PyPattyrn>

■ **python-patterns**

A collection of design patterns in Python.

<https://github.com/faif/python-patterns>

■ **transitions**

A lightweight, object-oriented finite state machine implementation.

<https://github.com/pytransitions/transitions>

ASGI Servers

***ASGI**-compatible web servers.*

■ **daphne**

A HTTP, HTTP2 and WebSocket protocol server for ASGI and ASGI-HTTP.

<https://github.com/django/daphne>

■ hypercorn

An ASGI and WSGI Server based on Hyper libraries and inspired by Gunicorn.

<https://github.com/pgjones/hypercorn>

■ uvicorn

A lightning-fast ASGI server implementation, using uvloop and httptools.

<https://github.com/encode/uvicorn>

Asynchronous Programming

Libraries for asynchronous, concurrent and parallel execution. Also see [awesome-asyncio](#).

■ asyncio

(Python standard library) Asynchronous I/O, event loop, coroutines and tasks.

<https://docs.python.org/3/library/asyncio.html>

■ awesome-asyncio

<https://github.com/timofurrer/awesome-asyncio>

■ concurrent.futures

(Python standard library) A high-level interface for asynchronously executing callables.

<https://docs.python.org/3/library/concurrent.futures.html>

■ eventlet

Asynchronous framework with WSGI support.

<https://github.com/eventlet/eventlet>

■ gevent

A coroutine-based Python networking library that uses [greenlet](<https://github.com/python-greenlet/greenlet>).

<https://github.com/gevent/gevent>

■ multiprocessing

(Python standard library) Process-based parallelism.

<https://docs.python.org/3/library/multiprocessing.html>

■ trio

A friendly library for async concurrency and I/O.

<https://github.com/python-trio/trio>

■ twisted

An event-driven networking engine.

<https://github.com/twisted/twisted>

■ uvloop

Ultra fast asyncio event loop.

<https://github.com/MagicStack/uvloop>

Audio

Libraries for manipulating audio and its metadata.

* Audio

■ audioFlux

A library for audio and music analysis, feature extraction.

<https://github.com/libAudioFlux/audioFlux>

■ audioread

Cross-library (GStreamer + Core Audio + MAD + FFmpeg) audio decoding.

<https://github.com/beetbox/audioread>

■ dejavu

Audio fingerprinting and recognition.

<https://github.com/worldveil/dejavu>

■ kapre

Keras Audio Preprocessors.

<https://github.com/keunwoochoi/kapre>

■ librosa

Python library for audio and music analysis.

<https://github.com/librosa/librosa>

■ matchering

A library for automated reference audio mastering.

<https://github.com/sergree/matchering>

■ **mingus**

An advanced music theory and notation package with MIDI file and playback support.

<http://bspaans.github.io/python-mingus/>

■ **pyaudioanalysis**

Audio feature extraction, classification, segmentation and applications.

<https://github.com/tyiannak/pyAudioAnalysis>

■ **pydub**

Manipulate audio with a simple and easy high level interface.

<https://github.com/jiaaro/pydub>

■ **timeside**

Open web audio processing framework.

<https://github.com/Parisson/TimeSide>

* Metadata

■ **beets**

A music library manager and [MusicBrainz](https://musicbrainz.org/) tagger.

<https://github.com/beetbox/beets>

■ **eyed3**

A tool for working with audio files, specifically MP3 files containing ID3 metadata.

<https://github.com/nicfit/eyeD3>

■ **mutagen**

A Python module to handle audio metadata.

<https://github.com/quodlibet/mutagen>

■ **tinytag**

A library for reading music meta data of MP3, OGG, FLAC and Wave files.

<https://github.com/devsnd/tinytag>

Authentication

Libraries for implementing authentications schemes.

* OAuth

■ **authlib**

JavaScript Object Signing and Encryption draft implementation.

<https://github.com/lepture/authlib>

■ **django-allauth**

Authentication app for Django that "just works."

<https://github.com/pennersr/django-allauth>

■ **django-oauth-toolkit**

OAuth 2 goodies for Django.

<https://github.com/jazzband/django-oauth-toolkit>

■ **oauthlib**

A generic and thorough implementation of the OAuth request-signing logic.

<https://github.com/oauthlib/oauthlib>

* JWT

■ **pyjwt**

JSON Web Token implementation in Python.

<https://github.com/jpadilla/pyjwt>

■ **python-jose**

A JOSE implementation in Python.

<https://github.com/mpdavis/python-jose/>

Build Tools

Compile software from source code.

■ **bitbake**

A make-like build tool for embedded Linux.

<https://github.com/openembedded/bitbake>

■ **buildout**

A build system for creating, assembling and deploying applications from multiple parts.

<https://github.com/buildout/buildout>

■ **platformio**

A console tool to build code with different development platforms.

<https://github.com/platformio/platformio-core>

■ **pybuilder**

A continuous build tool written in pure Python.

<https://github.com/pybuilder/pybuilder>

■ **scons**

A software construction tool.

<https://github.com/SCons/scons>

Built-in Classes Enhancement

Libraries for enhancing Python built-in classes.

■ **attrs**

Replacement for `__init__`, `__eq__`, `__repr__`, etc. boilerplate in class definitions.

<https://github.com/python-attrs/attrs>

■ **bidict**

Efficient, Pythonic bidirectional map data structures and related functionality..

<https://github.com/jab/bidict>

■ **box**

Python dictionaries with advanced dot notation access.

<https://github.com/cdgriffith/Box>

■ **dataclasses**

(Python standard library) Data classes.

<https://docs.python.org/3/library/dataclasses.html>

■ **dotteddict**

A library that provides a method of accessing lists and dicts with a dotted path notation.

<https://github.com/carlosescr/DottedDict>

CMS

Content Management Systems.

■ **feincms**

One of the most advanced Content Management Systems built on Django.

<https://github.com/feincms/feincms>

■ **indico**

A feature-rich event management system, made @ [CERN](<https://en.wikipedia.org/wiki/CERN>).

<https://github.com/indico/indico>

■ wagtail

A Django content management system.

<https://github.com/wagtail/wagtail>

Caching

Libraries for caching data.

■ beaker

A WSGI middleware for sessions and caching.

<https://github.com/bbangert/beaker>

■ django-cache-machine

Automatic caching and invalidation for Django models.

<https://github.com/django-cache-machine/django-cache-machine>

■ django-cacheops

A slick ORM cache with automatic granular event-driven invalidation.

<https://github.com/Suor/django-cacheops>

■ dogpile.cache

dogpile.cache is a next generation replacement for Beaker made by the same authors.

<https://github.com/sqlalchemy/dogpile.cache>

■ hermescache

Python caching library with tag-based invalidation and dogpile effect prevention.

<https://pypi.org/project/HermesCache/>

■ pylibmc

A Python wrapper around the [libmemcached](https://libmemcached.org/libMemcached.html) interface.

<https://github.com/lericson/pylibmc>

■ python-diskcache

SQLite and file backed cache backend with faster lookups than memcached and redis.

<https://github.com/grantjenks/python-diskcache>

ChatOps Tools

Libraries for chatbot development.

■ **errbot**

The easiest and most popular chatbot to implement ChatOps.

<https://github.com/errbotio/errbot/>

Code Analysis

Tools of static analysis, linters and code quality checkers. Also see [awesome-static-analysis](#).

* Code Analysis

■ **code2flow**

Turn your Python and JavaScript code into DOT flowcharts.

<https://github.com/scottrogowski/code2flow>

■ **prospector**

A tool to analyse Python code.

<https://github.com/PyCQA/prospector>

■ **vulture**

A tool for finding and analysing dead Python code.

<https://github.com/jendrikseipp/vulture>

* Code Linters

■ **flake8**

A wrapper around `pycodestyle`, `pyflakes` and McCabe.

<https://github.com/PyCQA/flake8>

■ **awesome-flake8-extensions**

<https://github.com/DmytroLitvinov/awesome-flake8-extensions>

■ **pylint**

A fully customizable source code analyzer.

<https://github.com/pylint-dev/pylint>

* Code Formatters

■ **black**

The uncompromising Python code formatter.

<https://github.com/psf/black>

■ isort

A Python utility / library to sort imports.

<https://github.com/timothycrosley/isort>

■ yapf

Yet another Python code formatter from Google.

<https://github.com/google/yapf>

* Static Type Checkers, also see [awesome-python-typing](#)

■ mypy

Check variable types during compile time.

<https://github.com/python/mypy>

■ pyre-check

Performant type checking.

<https://github.com/facebook/pyre-check>

■ typeshed

Collection of library stubs for Python, with static types.

<https://github.com/python/typeshed>

* Static Type Annotations Generators

■ monkeytype

A system for Python that generates static type annotations by collecting runtime types.

<https://github.com/Instagram/MonkeyType>

■ pytype

Pytype checks and infers types for Python code - without requiring type annotations.

<https://github.com/google/pytype>

Command-line Interface Development

Libraries for building command-line applications.

* Command-line Application Development

■ cement

CLI Application Framework for Python.

<https://github.com/datafolklabs/cement>

■ **click**

A package for creating beautiful command line interfaces in a composable way.

<https://github.com/pallets/click/>

■ **cliff**

A framework for creating command-line programs with multi-level commands.

<https://github.com/openstack/cliff>

■ **python-fire**

A library for creating command line interfaces from absolutely any Python object.

<https://github.com/google/python-fire>

■ **python-prompt-toolkit**

A library for building powerful interactive command lines.

<https://github.com/prompt-toolkit/python-prompt-toolkit>

* Terminal Rendering

■ **alive-progress**

A new kind of Progress Bar, with real-time throughput, eta and very cool animations.

<https://github.com/rsalmei/alive-progress>

■ **asciimatics**

A package to create full-screen text UIs (from interactive forms to ASCII animations).

<https://github.com/peterbrittain/asciimatics>

■ **bashplotlib**

Making basic plots in the terminal.

<https://github.com/glamp/bashplotlib>

■ **colorama**

Cross-platform colored terminal text.

<https://github.com/tartley/colorama>

■ **rich**

Python library for rich text and beautiful formatting in the terminal. Also provides a great `RichHandler` log handler.

<https://github.com/Textualize/rich>

■ **tqdm**

Fast, extensible progress bar for loops and CLI.

<https://github.com/tqdm/tqdm>

Command-line Tools

Useful CLI-based tools for productivity.

* Productivity Tools

■ **cookiecutter**

A command-line utility that creates projects from cookiecutters (project templates).

<https://github.com/cookiecutter/cookiecutter>

■ **copier**

A library and command-line utility for rendering projects templates.

<https://github.com/copier-org/copier>

■ **doitlive**

A tool for live presentations in the terminal.

<https://github.com/sloria/doitlive>

■ **howdoi**

Instant coding answers via the command line.

<https://github.com/gleitz/howdoi>

■ **invoke**

A tool for managing shell-oriented subprocesses and organizing executable Python code into CLI-invokable tasks.

<https://github.com/pyinvoke/invoke>

■ **pathpicker**

Select files out of bash output.

<https://github.com/facebook/PathPicker>

■ **thefuck**

Correcting your previous console command.

<https://github.com/nvbn/thefuck>

■ **tmuxp**

A [tmux](https://github.com/tmux/tmux) session manager.

<https://github.com/tmux-python/tmuxp>

■ **try**

A dead simple CLI to try out python packages - it's never been easier.

<https://github.com/timofurrer/try>

* CLI Enhancements

■ **httpie**

A command line HTTP client, a user-friendly cURL replacement.

<https://github.com/httpie/cli>

■ **iredis**

Redis CLI with autocompletion and syntax highlighting.

<https://github.com/laixintao/iredis>

■ **litecli**

SQLite CLI with autocompletion and syntax highlighting.

<https://github.com/dbcli/litecli>

■ **mycli**

MySQL CLI with autocompletion and syntax highlighting.

<https://github.com/dbcli/mycli>

■ **pgcli**

PostgreSQL CLI with autocompletion and syntax highlighting.

<https://github.com/dbcli/pgcli>

Computer Vision

Libraries for Computer Vision.

■ **easyocr**

Ready-to-use OCR with 40+ languages supported.

<https://github.com/JaidedAI/EasyOCR>

■ **kornia**

Open Source Differentiable Computer Vision Library for PyTorch.

<https://github.com/kornia/kornia/>

■ **opencv**

Open Source Computer Vision Library.

<https://opencv.org/>

■ **pytesseract**

A wrapper for [Google Tesseract OCR](https://github.com/tesseract-ocr).

<https://github.com/madmaze/pytesseract>

■ **tesseractocr**

Another simple, Pillow-friendly, wrapper around the `tesseract-ocr` API for OCR.

<https://github.com/sirfz/tesseractocr>

Configuration Files

Libraries for storing and parsing configuration options.

■ configobj

INI file parser with validation.

<https://github.com/DiffSK/configobj>

■ configparser

(Python standard library) INI file parser.

<https://docs.python.org/3/library/configparser.html>

■ hydra

Hydra is a framework for elegantly configuring complex applications.

<https://github.com/facebookresearch/hydra>

■ python-decouple

Strict separation of settings from code.

<https://github.com/HBNetwork/python-decouple>

Cryptography

■ cryptography

A package designed to expose cryptographic primitives and recipes to Python developers.

<https://github.com/pyca/cryptography>

■ paramiko

The leading native Python SSHv2 protocol library.

<https://github.com/paramiko/paramiko>

■ pynacl

Python binding to the Networking and Cryptography (NaCl) library.

<https://github.com/pyca/pynacl>

Data Analysis

Libraries for data analyzing.

■ **aws-sdk-pandas**

Pandas on AWS.

<https://github.com/aws/aws-sdk-pandas>

■ **datasette**

An open source multi-tool for exploring and publishing data.

<https://github.com/simonw/datasette>

■ **optimus**

Agile Data Science Workflows made easy with PySpark.

<https://github.com/hi-primus/optimus>

■ **pandas**

A library providing high-performance, easy-to-use data structures and data analysis tools.

<http://pandas.pydata.org/>

Data Validation

Libraries for validating data. Used for forms in many cases.

■ **cerberus**

A lightweight and extensible data validation library.

<https://github.com/pyeve/cerberus>

■ **colander**

Validating and deserializing data obtained via XML, JSON, an HTML form post.

<https://github.com/Pylons/colander>

■ **jsonschema**

An implementation of [JSON Schema](http://json-schema.org/) for Python.

<https://github.com/python-jsonschema/jsonschema>

■ **pydantic**

Data validation using Python type hints.

<https://github.com/pydantic/pydantic>

■ **schema**

A library for validating Python data structures.

<https://github.com/keleshev/schema>

■ **schematics**

Data Structure Validation.

<https://github.com/schematics/schematics>

■ **voluptuous**

A Python data validation library.

<https://github.com/alecthomas/voluptuous>

Data Visualization

Libraries for visualizing data. Also see [awesome-javascript](#).

■ **altair**

Declarative statistical visualization library for Python.

<https://github.com/altair-viz/altair>

■ **bokeh**

Interactive Web Plotting for Python.

<https://github.com/bokeh/bokeh>

■ **bqplot**

Interactive Plotting Library for the Jupyter Notebook.

<https://github.com/bloomberg/bqplot>

■ **cartopy**

A cartographic python library with matplotlib support.

<https://github.com/SciTools/cartopy>

■ **diagrams**

Diagram as Code.

<https://github.com/mingrammer/diagrams>

■ **matplotlib**

A Python 2D plotting library.

<https://github.com/matplotlib/matplotlib>

■ **plotnine**

A grammar of graphics for Python based on ggplot2.

<https://github.com/has2k1/plotnine>

■ **pygal**

A Python SVG Charts Creator.

<https://github.com/Kozea/pygal>

■ **pygraphviz**

Python interface to [Graphviz](http://www.graphviz.org/).

<https://github.com/pygraphviz/pygraphviz/>

■ **pyqtgraph**

Interactive and realtime 2D/3D/Image plotting and science/engineering widgets.

<https://github.com/pyqtgraph/pyqtgraph>

■ **seaborn**

Statistical data visualization using Matplotlib.

<https://github.com/mwaskom/seaborn>

■ **vispy**

High-performance scientific visualization based on OpenGL.

<https://github.com/vispy/vispy>

Database

Databases implemented in Python.

■ **pickleDB**

A simple and lightweight key-value store for Python.

<https://github.com/patx/pickledb>

■ **tinydb**

A tiny, document-oriented database.

<https://github.com/msiemens/tinydb>

■ **zodb**

A native object database for Python. A key-value and object graph database.

<https://github.com/zopefoundation/ZODB>

Database Drivers

Libraries for connecting and operating databases.

* MySQL - [awesome-mysql](#)

■ **mysqlclient**

MySQL connector with Python 3 support

([mysql-python](https://sourceforge.net/projects/mysql-python/) fork).

<https://github.com/PyMySQL/mysqlclient>

■ **pymysql**

A pure Python MySQL driver compatible to mysql-python.

<https://github.com/PyMySQL/PyMySQL>

* PostgreSQL - **awesome-postgres**

■ **psycopg**

The most popular PostgreSQL adapter for Python.

<https://github.com/psycopg/psycopg>

* SQLite - **awesome-sqlite**

■ **sqlite-utils**

Python CLI utility and library for manipulating SQLite databases.

<https://github.com/simonw/sqlite-utils>

■ **sqlite3**

(Python standard library) SQLite interface compliant with DB-API 2.0.

<https://docs.python.org/3/library/sqlite3.html>

* Other Relational Databases

■ **clickhouse-driver**

Python driver with native interface for ClickHouse.

<https://github.com/mymarilyn/clickhouse-driver>

■ **pymssql**

A simple database interface to Microsoft SQL Server.

<https://github.com/pymssql/pymssql>

* NoSQL Databases

■ **cassandra-driver**

The Python Driver for Apache Cassandra.

<https://github.com/datastax/python-driver>

■ **happybase**

A developer-friendly library for Apache HBase.

<https://github.com/python-happybase/happybase>

■ kafka-python

The Python client for Apache Kafka.

<https://github.com/dpkp/kafka-python>

■ motor

The async Python driver for MongoDB.

<https://github.com/mongodb/motor>

■ pymongo

The official Python client for MongoDB.

<https://github.com/mongodb/mongo-python-driver>

■ redis-py

The Python client for Redis.

<https://github.com/redis/redis-py>

Date and Time

Libraries for working with dates and times.

■ arrow

A Python library that offers a sensible and human-friendly approach to creating, manipulating, formatting and converting dates, times and timestamps.

<https://github.com/arrow-py/arrow>

■ dateutil

Extensions to the standard Python [datetime](https://docs.python.org/3/library/datetime.html) module.

<https://github.com/dateutil/dateutil>

■ pendulum

Python datetimes made easy.

<https://github.com/sdispater/pendulum>

■ pytz

World timezone definitions, modern and historical. Brings the [tz database](https://en.wikipedia.org/wiki/Tz_database) into Python.

<https://pypi.org/project/pytz/>

Debugging Tools

Libraries for debugging code.

* pdb-like Debugger

■ **ipdb**

IPython-enabled [pdb](https://docs.python.org/3/library/pdb.html).

<https://github.com/gotcha/ipdb>

■ **pudb**

A full-screen, console-based Python debugger.

<https://github.com/inducer/pudb>

* Tracing

■ **manhole**

Debugging UNIX socket connections and present the stacktraces for all threads and an interactive prompt.

<https://github.com/ionelmc/python-manhole>

■ **python-hunter**

A flexible code tracing toolkit.

<https://github.com/ionelmc/python-hunter>

* Profiler

■ **py-spy**

A sampling profiler for Python programs. Written in Rust.

<https://github.com/benfred/py-spy>

■ **vprof**

Visual Python profiler.

<https://github.com/nvdv/vprof>

* Others

■ **django-debug-toolbar**

Display various debug information for Django.

<https://github.com/jazzband/django-debug-toolbar>

■ **flask-debugtoolbar**

A port of the django-debug-toolbar to flask.

<https://github.com/pallets-eco/flask-debugtoolbar>

■ **icecream**

Inspect variables, expressions, and program execution with a single, simple function call.

<https://github.com/gruns/icecream>

■ pyelftools

Parsing and analyzing ELF files and DWARF debugging information.

<https://github.com/eliben/pyelftools>

Deep Learning

Frameworks for Neural Networks and Deep Learning. Also see [awesome-deep-learning](#).

■ keras

A high-level neural networks library and capable of running on top of either TensorFlow or Theano.

<https://github.com/keras-team/keras>

■ pytorch-lightning

Deep learning framework to train, deploy, and ship AI products Lightning fast.

<https://github.com/Lightning-AI/pytorch-lightning>

■ pytorch

Tensors and Dynamic neural networks in Python with strong GPU acceleration.

<https://github.com/pytorch/pytorch>

■ stable-baselines3

PyTorch implementations of Stable Baselines (deep) reinforcement learning algorithms.

<https://github.com/DLR-RM/stable-baselines3>

■ tensorflow

The most popular Deep Learning framework created by Google.

<https://github.com/tensorflow/tensorflow>

■ theano

A library for fast numerical computation.

<https://github.com/Theano/Theano>

DevOps Tools

Software and libraries for DevOps.

* Configuration Management

■ **ansible**

A radically simple IT automation platform.

<https://github.com/ansible/ansible>

■ **cloudinit**

A multi-distribution package that handles early initialization of a cloud instance.

<https://github.com/canonical/cloud-init>

■ **openstack**

Open source software for building private and public clouds.

<https://www.openstack.org/>

■ **pyinfra**

A versatile CLI tools and python libraries to automate infrastructure.

<https://github.com/pyinfra-dev/pyinfra>

■ **saltstack**

Infrastructure automation and management system.

<https://github.com/saltstack/salt>

* SSH-style Deployment

■ **cuisine**

Chef-like functionality for Fabric.

<https://github.com/sebastien/cuisine>

■ **fabric**

A simple, Pythonic tool for remote execution and deployment.

<https://github.com/fabric/fabric>

* Process Management

■ **supervisor**

Supervisor process control system for UNIX.

<https://github.com/Supervisor/supervisor>

* Monitoring

■ **psutil**

A cross-platform process and system utilities module.

<https://github.com/giampaolo/psutil>

* Backup

■ borg

A deduplicating archiver with compression and encryption.

<https://github.com/borgbackup/borg>

Distributed Computing

Frameworks and libraries for Distributed Computing.

* Batch Processing

■ dask

A flexible parallel computing library for analytic computing.

<https://github.com/dask/dask>

■ luigi

A module that helps you build complex pipelines of batch jobs.

<https://github.com/spotify/luigi>

■ PySpark

[Apache Spark](https://spark.apache.org/) Python API.

<https://github.com/apache/spark>

■ Ray

A system for parallel and distributed Python that unifies the machine learning ecosystem.

<https://github.com/ray-project/ray/>

* Stream Processing

■ faust

A stream processing library, porting the ideas from [Kafka Streams](https://kafka.apache.org/documentation/streams/) to Python.

<https://github.com/robinhood/faust>

■ streamparse

Run Python code against real-time streams of data via [Apache Storm](http://storm.apache.org/).

<https://github.com/Parseely/streamparse>

Distribution

Libraries to create packaged executables for release distribution.

■ **py2app**

Freezes Python scripts (Mac OS X).

<https://github.com/ronaldoussoren/py2app>

■ **py2exe**

Freezes Python scripts (Windows).

<https://github.com/py2exe/py2exe>

■ **pyarmor**

A tool used to obfuscate python scripts, bind obfuscated scripts to fixed machine or expire obfuscated scripts.

<https://github.com/dashingsoft/pyarmor>

■ **pyinstaller**

Converts Python programs into stand-alone executables (cross-platform).

<https://github.com/pyinstaller/pyinstaller>

■ **shiv**

A command line utility for building fully self-contained zipapps (PEP 441), but with all their dependencies included.

<https://github.com/linkedin/shiv>

Documentation

Libraries for generating project documentation.

■ **sphinx**

Python Documentation generator.

<https://github.com/sphinx-doc/sphinx/>

■ **awesome-sphinxdoc**

<https://github.com/yoloseem/awesome-sphinxdoc>

■ **pdoc**

Epydoc replacement to auto generate API documentation for Python libraries.

<https://github.com/mitmproxy/pdoc>

Downloader

Libraries for downloading.

■ **akshare**

A financial data interface library, built for human beings!

<https://github.com/jindaxiang/akshare>

■ **s3cmd**

A command line tool for managing Amazon S3 and CloudFront.

<https://github.com/s3tools/s3cmd>

■ **youtube-dl**

A command-line program to download videos from YouTube and other video sites.

<https://github.com/yt-dl-org/youtube-dl/>

Editor Plugins and IDEs

* Emacs

■ **elpy**

Emacs Python Development Environment.

<https://github.com/jorgenschaefel/elpy>

* Vim

■ **jedi-vim**

Vim bindings for the Jedi auto-completion library for Python.

<https://github.com/davidhalter/jedi-vim>

■ **python-mode**

An all in one plugin for turning Vim into a Python IDE.

<https://github.com/python-mode/python-mode>

■ **YouCompleteMe**

Includes [Jedi](<https://github.com/davidhalter/jedi>)-based completion engine for Python.

<https://github.com/Valloric/YouCompleteMe>

* Visual Studio

■ **PTVS**

Python Tools for Visual Studio.

<https://github.com/Microsoft/PTVS>

* Visual Studio Code

■ Python

The official VSCode extension with rich support for Python.

<https://marketplace.visualstudio.com/items?itemName=ms-py...>

* IDE

■ PyCharm

Commercial Python IDE by JetBrains. Has free community edition available.

<https://www.jetbrains.com/pycharm/>

■ spyder

Open Source Python IDE.

<https://github.com/spyder-ide/spyder>

Email

Libraries for sending and parsing email.

* Mail Servers

■ modoboa

A mail hosting and management platform including a modern Web UI.

<https://github.com/modoboa/modoboa>

■ salmon

A Python Mail Server.

<https://github.com/moggers87/salmon>

* Clients

■ imbox

Python IMAP for Humans.

<https://github.com/martinrusev/imbox>

■ yagmail

Yet another Gmail/SMTP client.

<https://github.com/kootenpv/yagmail>

* Others

■ flanker

An email address and Mime parsing library.

<https://github.com/mailgun/flanker>

■ **mailer**

High-performance extensible mail delivery framework.

<https://github.com/marrow/mailer>

Environment Management

Libraries for Python version and virtual environment management.

■ **pyenv**

Simple Python version management.

<https://github.com/pyenv/pyenv>

■ **virtualenv**

A tool to create isolated Python environments.

<https://github.com/pypa/virtualenv>

File Manipulation

Libraries for file manipulation.

■ **mimetypes**

(Python standard library) Map filenames to MIME types.

<https://docs.python.org/3/library/mimetypes.html>

■ **path.py**

A module wrapper for [os.path](https://docs.python.org/3/library/os.path.html).

<https://github.com/jaraco/path.py>

■ **pathlib**

(Python standard library) An cross-platform, object-oriented path library.

<https://docs.python.org/3/library/pathlib.html>

■ **python-magic**

A Python interface to the libmagic file type identification library.

<https://github.com/ahupp/python-magic>

■ **watchdog**

API and shell utilities to monitor file system events.

<https://github.com/gorakhargosh/watchdog>

Functional Programming

Functional Programming with Python.

■ coconut

A variant of Python built for simple, elegant, Pythonic functional programming.

<https://github.com/evhub/coconut>

■ cytoolz

Cython implementation of `Toolz`: High performance functional utilities.

<https://github.com/pytoolz/cytoolz/>

■ funcy

A fancy and practical functional tools.

<https://github.com/Suor/funcy>

■ more-itertools

More routines for operating on iterables, beyond `itertools`.

<https://github.com/erikrose/more-itertools>

■ returns

A set of type-safe monads, transformers, and composition utilities.

<https://github.com/dry-python/returns>

■ toolz

A collection of functional utilities for iterators, functions, and dictionaries.

<https://github.com/pytoolz/toolz>

GUI Development

Libraries for working with graphical user interface applications.

■ curses

Built-in wrapper for [ncurses](http://www.gnu.org/software/ncurses/) used to create terminal GUI applications.

<https://docs.python.org/3/library/curses.html>

■ DearPyGui

A Simple GPU accelerated Python GUI framework

<https://github.com/RaylockLLC/DearPyGui/>

■ Eel

A library for making simple Electron-like offline HTML/JS GUI apps.

<https://github.com/ChrisKnott/Eel>

■ enaml

Creating beautiful user-interfaces with Declarative Syntax like QML.

<https://github.com/nucleic/enaml>

■ Flexx

Flexx is a pure Python toolkit for creating GUI's, that uses web technology for its rendering.

<https://github.com/zooflO/flexx>

■ Gooney

Turn command line programs into a full GUI application with one line.

<https://github.com/chriskiehl/Gooney>

■ kivy

A library for creating NUI applications, running on Windows, Linux, Mac OS X, Android and iOS.

<https://kivy.org/>

■ pygame

A cross-platform windowing and multimedia library for Python.

<https://github.com/pyglet/pyglet>

■ PyGObject

Python Bindings for GLib/GObject/GIO/GTK+ (GTK+3).

<https://pygobject.readthedocs.io/>

■ PyQt

Python bindings for the [Qt](<https://www.qt.io/>) cross-platform application and UI framework.

<https://doc.qt.io/qtforpython/>

■ PySimpleGUI

Wrapper for tkinter, Qt, WxPython and Remi.

<https://github.com/PySimpleGUI/PySimpleGUI>

■ pywebview

A lightweight cross-platform native wrapper around a webview component.

<https://github.com/r0x0r/pywebview/>

■ Tkinter

Tkinter is Python's de-facto standard GUI package.

<https://wiki.python.org/moin/TkInter>

■ Toga

A Python native, OS native GUI toolkit.

<https://github.com/pybee/toga>

■ urwid

A library for creating terminal GUI applications with strong support for widgets, events, rich colors, etc.

<http://urwid.org/>

■ wxPython

A blending of the wxWidgets C++ class library with the Python.

<https://wxpython.org/>

GraphQL

Libraries for working with GraphQL.

■ graphene

GraphQL framework for Python.

<https://github.com/graphql-python/graphene/>

Game Development

Awesome game development libraries.

■ Arcade

Arcade is a modern Python framework for crafting games with compelling graphics and sound.

<https://api.arcade.academy/en/latest/>

■ Cocos2d

cocos2d is a framework for building 2D games, demos, and other graphical/interactive applications.

<https://www.cocos.com/en/cocos2d-x>

■ Harfang3D

Python framework for 3D, VR and game development.

<http://www.harfang3d.com>

■ Panda3D

3D game engine developed by Disney.

<https://www.panda3d.org/>

■ Pygame

Pygame is a set of Python modules designed for writing games.

<http://www.pygame.org/news.html>

■ PyOgre

Python bindings for the Ogre 3D render engine, can be used for games, simulations, anything 3D.

<http://www.ogre3d.org/tikiwiki/PyOgre>

■ PyOpenGL

Python ctypes bindings for OpenGL and it's related APIs.

<http://pyopengl.sourceforge.net/>

■ PySDL2

A ctypes based wrapper for the SDL2 library.

<https://pysdl2.readthedocs.io>

■ RenPy

A Visual Novel engine.

<https://www.renpy.org/>

Geolocation

Libraries for geocoding addresses and working with latitudes and longitudes.

■ django-countries

A Django app that provides a country field for models and forms.

<https://github.com/SmileyChris/django-countries>

■ geodjango

A world-class geographic web framework.

<https://docs.djangoproject.com/en/dev/ref/contrib/gis/>

■ geojson

Python bindings and utilities for GeoJSON.

<https://github.com/jazzband/geojson>

■ geopy

Python Geocoding Toolbox.

<https://github.com/geopy/geopy>

HTML Manipulation

Libraries for working with HTML and XML.

■ BeautifulSoup

Providing Pythonic idioms for iterating, searching, and modifying HTML or XML.

<https://www.crummy.com/software/BeautifulSoup/bs4/doc/>

■ bleach

A whitelist-based HTML sanitization and text linkification library.

<https://github.com/mozilla/bleach>

■ cssutils

A CSS library for Python.

<https://pypi.org/project/cssutils/>

■ html5lib

A standards-compliant library for parsing and serializing HTML documents and fragments.

<https://github.com/html5lib/html5lib-python>

■ lxml

A very fast, easy-to-use and versatile library for handling HTML and XML.

<http://lxml.de/>

■ markupsafe

Implements a XML/HTML/XHTML Markup safe string for Python.

<https://github.com/pallets/markupsafe>

■ pyquery

A jQuery-like library for parsing HTML.

<https://github.com/gawel/pyquery>

■ untangle

Converts XML documents to Python objects for easy access.

<https://github.com/stchris/untangle>

■ WeasyPrint

A visual rendering engine for HTML and CSS that can export to PDF.

<http://weasyprint.org>

■ xmldataset

Simple XML Parsing.

<https://xmldataset.readthedocs.io/en/latest/>

■ **xmltodict**

Working with XML feel like you are working with JSON.

<https://github.com/martinblech/xmltodict>

HTTP Clients

Libraries for working with HTTP.

■ **httpx**

A next generation HTTP client for Python.

<https://github.com/encode/httpx>

■ **requests**

HTTP Requests for Humans.

<https://github.com/psf/requests>

■ **treq**

Python requests like API built on top of Twisted's HTTP client.

<https://github.com/twisted/treq>

■ **urllib3**

A HTTP library with thread-safe connection pooling, file post support, sanity friendly.

<https://github.com/urllib3/urllib3>

Hardware

Libraries for programming with hardware.

■ **keyboard**

Hook and simulate global keyboard events on Windows and Linux.

<https://github.com/boppreh/keyboard>

■ **mouse**

Hook and simulate global mouse events on Windows and Linux.

<https://github.com/boppreh/mouse>

■ **pynput**

A library to control and monitor input devices.

<https://github.com/moses-palmer/pynput>

■ scapy

A brilliant packet manipulation library.

<https://github.com/secdev/scapy>

Image Processing

Libraries for manipulating images.

■ pillow

Pillow is the friendly [PIL](http://www.pythonware.com/products/pil/) fork.

<https://github.com/python-pillow/Pillow>

■ pymatting

A library for alpha matting.

<http://github.com/pymatting/pymatting>

■ python-barcode

Create barcodes in Python with no extra dependencies.

<https://github.com/WhyNotHugo/python-barcode>

■ python-qrcode

A pure Python QR Code generator.

<https://github.com/lincolnloop/python-qrcode>

■ pyvips

A fast image processing library with low memory needs.

<https://github.com/libvips/pyvips>

■ pywal

A tool that generates color schemes from images.

<https://github.com/dylanaraps/pywal>

■ quads

Computer art based on quadtrees.

<https://github.com/fogleman/Quads>

■ scikit-image

A Python library for (scientific) image processing.

<http://scikit-image.org/>

■ thumbor

A smart imaging service. It enables on-demand crop, re-sizing and flipping of images.

<https://github.com/thumbor/thumbor>

■ wand

Python bindings for [MagickWand](http://www.imagemagick.org/script/magick-wand.php), C API for ImageMagick.

<https://github.com/emccconville/wand>

Implementations

Implementations of Python.

■ cpython

Implementation of the Python programming language written in Common Lisp.

<https://github.com/metawilm/cl-python>

■ cpython

****Default, most widely used implementation of the Python programming language written in C.****

<https://github.com/python/cpython>

■ cython

Optimizing Static Compiler for Python.

<https://github.com/cython/cython>

■ ironpython

Implementation of the Python programming language written in C#.

<https://github.com/IronLanguages/ironpython3>

■ micropython

A lean and efficient Python programming language implementation.

<https://github.com/micropython/micropython>

■ numba

Python JIT compiler to LLVM aimed at scientific Python.

<https://github.com/numba/numba>

■ peachpy

x86-64 assembler embedded in Python.

<https://github.com/Maratyszcza/PeachPy>

■ **pypy**

A very fast and compliant implementation of the Python language.

<https://foss.heptapod.net/pypy/pypy>

■ **pyston**

A Python implementation using JIT techniques.

<https://github.com/pyston/pyston/>

Interactive Interpreter

Interactive Python interpreters (REPL).

■ **bpython**

A fancy interface to the Python interpreter.

<https://github.com/bpython/bpython>

■ **Jupyter Notebook (IPython)**

A rich toolkit to help you make the most out of using Python interactively.

<https://jupyter.org>

■ **awesome-jupyter**

<https://github.com/markusschanta/awesome-jupyter>

■ **ptpython**

Advanced Python REPL built on top of the

[python-prompt-toolkit](<https://github.com/jonathanslenders/python-prompt-toolkit>).

<https://github.com/jonathanslenders/ptpython>

Internationalization

Libraries for working with i18n.

■ **Babel**

An internationalization library for Python.

<http://babel.pocoo.org/en/latest/>

■ **PyICU**

A wrapper of International Components for Unicode C++ library ([ICU](<http://site.icu-project.org/>)).

<https://github.com/ovalhub/pyicu>

Job Scheduler

Libraries for scheduling jobs.

■ Airflow

Airflow is a platform to programmatically author, schedule and monitor workflows.

<https://airflow.apache.org/>

■ APScheduler

A light but powerful in-process task scheduler that lets you schedule functions.

<http://apscheduler.readthedocs.io/en/latest/>

■ django-schedule

A calendaring app for Django.

<https://github.com/thauber/django-schedule>

■ doit

A task runner and build tool.

<http://pydoit.org/>

■ gunnery

Multipurpose task execution tool for distributed systems with web-based interface.

<https://github.com/gunnery/gunnery>

■ Joblib

A set of tools to provide lightweight pipelining in Python.

<https://joblib.readthedocs.io/>

■ Plan

Writing crontab file in Python like a charm.

<https://github.com/fengsp/plan>

■ Prefect

A modern workflow orchestration framework that makes it easy to build, schedule and monitor robust data pipelines.

<https://github.com/PrefectHQ/prefect>

■ schedule

Python job scheduling for humans.

<https://github.com/dbader/schedule>

■ Spiff

A powerful workflow engine implemented in pure Python.

<https://github.com/knipknap/SpiffWorkflow>

■ TaskFlow

A Python library that helps to make task execution easy, consistent and reliable.

<https://docs.openstack.org/developer/taskflow/>

Logging

Libraries for generating and working with logs.

■ logbook

Logging replacement for Python.

<http://logbook.readthedocs.io/en/stable/>

■ logging

(Python standard library) Logging facility for Python.

<https://docs.python.org/3/library/logging.html>

■ loguru

Library which aims to bring enjoyable logging in Python.

<https://github.com/Delgan/loguru>

■ sentry-python

Sentry SDK for Python.

<https://github.com/getsentry/sentry-python>

■ structlog

Structured logging made easy.

<https://www.structlog.org/en/stable/>

Machine Learning

Libraries for Machine Learning. Also see [awesome-machine-learning](#).

■ gym

A toolkit for developing and comparing reinforcement learning algorithms.

<https://github.com/openai/gym>

■ H2O

Open Source Fast Scalable Machine Learning Platform.

<https://github.com/h2oai/h2o-3>

■ Metrics

Machine learning evaluation metrics.

<https://github.com/benhamner/Metrics>

■ MindsDB

MindsDB is an open source AI layer for existing databases that allows you to effortlessly develop, train and deploy state-of-the-art machine learning models using standard queries.

<https://github.com/mindsdb/mindsdb>

■ NuPIC

Numenta Platform for Intelligent Computing.

<https://github.com/numenta/nupic>

■ scikit-learn

The most popular Python library for Machine Learning.

<http://scikit-learn.org/>

■ Spark ML

[Apache Spark](http://spark.apache.org/)'s scalable Machine Learning library.

<http://spark.apache.org/docs/latest/ml-guide.html>

■ vowpal_porpoise

A lightweight Python wrapper for [Vowpal Wabbit](https://github.com/JohnLangford/vowpal_wabbit/).

https://github.com/josephreisinger/vowpal_porpoise

■ xgboost

A scalable, portable, and distributed gradient boosting library.

<https://github.com/dmlc/xgboost>

Microsoft Windows

Python programming on Microsoft Windows.

■ Python(x,y)

Scientific-applications-oriented Python Distribution based on Qt and Spyder.

<http://python-xy.github.io/>

■ pythonlibs

Unofficial Windows binaries for Python extension packages.

<http://www.lfd.uci.edu/~gohlke/pythonlibs/>

■ PythonNet

Python Integration with the .NET Common Language Runtime (CLR).

<https://github.com/pythonnet/pythonnet>

■ PyWin32

Python Extensions for Windows.

<https://github.com/mhammond/pywin32>

■ WinPython

Portable development environment for Windows 7/8.

<https://winpython.github.io/>

Miscellaneous

Useful libraries or tools that don't fit in the categories above.

■ blinker

A fast Python in-process signal/event dispatching system.

<https://github.com/jek/blinker>

■ boltons

A set of pure-Python utilities.

<https://github.com/mahmoud/boltons>

■ itsdangerous

Various helpers to pass trusted data to untrusted environments.

<https://github.com/pallets/itsdangerous>

■ magenta

A tool to generate music and art using artificial intelligence.

<https://github.com/magenta/magenta>

■ pluginbase

A simple but flexible plugin system for Python.

<https://github.com/mitsuhiko/pluginbase>

■ tryton

A general purpose business framework.

<http://www.tryton.org/>

Natural Language Processing

Libraries for working with human languages.

- General

■ **gensim**

Topic Modeling for Humans.

<https://github.com/RaRe-Technologies/gensim>

■ **langid.py**

Stand-alone language identification system.

<https://github.com/saffsd/langid.py>

■ **nltk**

A leading platform for building Python programs to work with human language data.

<http://www.nltk.org/>

■ **pattern**

A web mining module.

<https://github.com/clips/pattern>

■ **polyglot**

Natural language pipeline supporting hundreds of languages.

<https://github.com/aboSamoor/polyglot>

■ **pytext**

A natural language modeling framework based on PyTorch.

<https://github.com/facebookresearch/pytext>

■ **PyTorch-NLP**

A toolkit enabling rapid deep learning NLP prototyping for research.

<https://github.com/PetrochukM/PyTorch-NLP>

■ **spacy**

A library for industrial-strength natural language processing in Python and Cython.

<https://spacy.io/>

■ **Stanza**

The Stanford NLP Group's official Python library, supporting 60+ languages.

<https://github.com/stanfordnlp/stanza>

- Chinese

■ funNLP

A collection of tools and datasets for Chinese NLP.

<https://github.com/fighting41love/funNLP>

■ jieba

The most popular Chinese text segmentation library.

<https://github.com/fxsjy/jieba>

■ pkuseg-python

A toolkit for Chinese word segmentation in various domains.

<https://github.com/lancopku/pkuseg-python>

■ snownlp

A library for processing Chinese text.

<https://github.com/isnowfy/snownlp>

Network Virtualization

Tools and libraries for Virtual Networking and SDN (Software Defined Networking).

■ mininet

A popular network emulator and API written in Python.

<https://github.com/mininet/mininet>

■ napalm

Cross-vendor API to manipulate network devices.

<https://github.com/napalm-automation/napalm>

■ pox

A Python-based SDN control applications, such as OpenFlow SDN controllers.

<https://github.com/noxrepo/pox>

News Feed

Libraries for building user's activities.

■ **django-activity-stream**

Generating generic activity streams from the actions on your site.

<https://github.com/justquick/django-activity-stream>

■ **Stream Framework**

Building news feed and notification systems using Cassandra and Redis.

<https://github.com/tschellenbach/Stream-Framework>

ORM

Libraries that implement Object-Relational Mapping or data mapping techniques.

* Relational Databases

■ **Django Models**

The Django ORM.

<https://docs.djangoproject.com/en/dev/topics/db/models/>

■ **SQLAlchemy**

The Python SQL Toolkit and Object Relational Mapper.

<https://www.sqlalchemy.org/>

■ **awesome-sqlalchemy**

<https://github.com/dahlia/awesome-sqlalchemy>

■ **dataset**

Store Python dicts in a database - works with SQLite, MySQL, and PostgreSQL.

<https://github.com/pudo/dataset>

■ **orator**

The Orator ORM provides a simple yet beautiful ActiveRecord implementation.

<https://github.com/sdispater/orator>

■ **orm**

An async ORM.

<https://github.com/encode/orm>

■ **peewee**

A small, expressive ORM.

<https://github.com/coleifer/peewee>

■ **pony**

ORM that provides a generator-oriented interface to SQL.

<https://github.com/ponyorm/pony/>

■ **pydal**

A pure Python Database Abstraction Layer.

<https://github.com/web2py/pydal/>

* NoSQL Databases

■ **hot-redis**

Rich Python data types for Redis.

<https://github.com/stephenmcd/hot-redis>

■ **mongoengine**

A Python Object-Document-Mapper for working with MongoDB.

<https://github.com/MongoEngine/mongoengine>

■ **PynamoDB**

A Pythonic interface for [Amazon DynamoDB](<https://aws.amazon.com/dynamodb/>).

<https://github.com/pynamodb/PynamoDB>

■ **redisco**

A Python Library for Simple Models and Containers Persisted in Redis.

<https://github.com/kiddouk/redisco>

Package Management

Libraries for package and dependency management.

■ **pip**

The package installer for Python.

<https://pip.pypa.io/en/stable/>

■ **pip-tools**

A set of tools to keep your pinned Python dependencies fresh.

<https://github.com/jazzband/pip-tools>

■ **PyPI**

<https://pypi.org/>

■ conda

Cross-platform, Python-agnostic binary package manager.

<https://github.com/conda/conda/>

■ poetry

Python dependency management and packaging made easy.

<https://github.com/sdispater/poetry>

Package Repositories

Local PyPI repository server and proxies.

■ bandersnatch

PyPI mirroring tool provided by Python Packaging Authority (PyPA).

<https://github.com/pypa/bandersnatch/>

■ devpi

PyPI server and packaging/testing/release tool.

<https://github.com/devpi/devpi>

■ localshop

Local PyPI server (custom packages and auto-mirroring of pypi).

<https://github.com/jazzband/localshop>

■ warehouse

Next generation Python Package Repository (PyPI).

<https://github.com/pypa/warehouse>

Penetration Testing

Frameworks and tools for penetration testing.

■ fsociety

A Penetration testing framework.

<https://github.com/Manisso/fsociety>

■ setoolkit

A toolkit for social engineering.

<https://github.com/trustedsec/social-engineer-toolkit>

■ sqlmap

Automatic SQL injection and database takeover tool.

<https://github.com/sqlmapproject/sqlmap>

Permissions

Libraries that allow or deny users access to data or functionality.

■ django-guardian

Implementation of per object permissions for Django 1.2+

<https://github.com/django-guardian/django-guardian>

■ django-rules

A tiny but powerful app providing object-level permissions to Django, without requiring a database.

<https://github.com/dfunckt/django-rules>

Processes

Libraries for starting and communicating with OS processes.

■ delegator.py

[Subprocesses](https://docs.python.org/3/library/subprocess.html) for Humans 2.0.

<https://github.com/amitt001/delegator.py>

■ sarge

Yet another wrapper for subprocess.

<https://sarge.readthedocs.io/en/latest/>

■ sh

A full-fledged subprocess replacement for Python.

<https://github.com/amoffat/sh>

Recommender Systems

Libraries for building recommender systems.

■ annoy

Approximate Nearest Neighbors in C++/Python optimized for memory usage.

<https://github.com/spotify/annoy>

■ **fastFM**

A library for Factorization Machines.

<https://github.com/ibayer/fastFM>

■ **implicit**

A fast Python implementation of collaborative filtering for implicit datasets.

<https://github.com/benfred/implicit>

■ **libffm**

A library for Field-aware Factorization Machine (FFM).

<https://github.com/guestwalk/libffm>

■ **lightfm**

A Python implementation of a number of popular recommendation algorithms.

<https://github.com/lyst/lightfm>

■ **spotlight**

Deep recommender models using PyTorch.

<https://github.com/maciejkula/spotlight>

■ **Surprise**

A scikit for building and analyzing recommender systems.

<https://github.com/NicolasHug/Surprise>

■ **tensorrec**

A Recommendation Engine Framework in TensorFlow.

<https://github.com/jfkirk/tensorrec>

Refactoring

Refactoring tools and libraries for Python

■ **Bicycle Repair Man**

Bicycle Repair Man, a refactoring tool for Python.

<http://bicyclerepair.sourceforge.net/>

■ **Bowler**

Safe code refactoring for modern Python.

<https://pybowler.io/>

■ Rope

Rope is a python refactoring library.

<https://github.com/python-rope/rope>

RESTful API

Libraries for building RESTful APIs.

* Django

■ django-rest-framework

A powerful and flexible toolkit to build web APIs.

<https://github.com/encode/django-rest-framework>

■ django-tastypie

Creating delicious APIs for Django apps.

<https://github.com/django-tastypie/django-tastypie>

* Flask

■ eve

REST API framework powered by Flask, MongoDB and good intentions.

<https://github.com/pyeve/eve>

■ flask-api

Browsable Web APIs for Flask.

<https://github.com/flask-api/flask-api>

■ flask-restful

Quickly building REST APIs for Flask.

<https://github.com/flask-restful/flask-restful>

* Pyramid

■ cornice

A RESTful framework for Pyramid.

<https://github.com/Cornices/cornice>

* Framework agnostic

■ falcon

A high-performance framework for building cloud APIs and web app backends.

<https://github.com/falconry/falcon>

■ fastapi

A modern, fast, web framework for building APIs with Python 3.6+ based on standard Python type hints.

<https://github.com/tiangolo/fastapi>

■ hug

A Python 3 framework for cleanly exposing APIs.

<https://github.com/hugapi/hug>

■ sandman2

Automated REST APIs for existing database-driven systems.

<https://github.com/jeffknupp/sandman2>

■ sanic

A Python 3.6+ web server and web framework that's written to go fast.

<https://github.com/sanic-org/sanic>

Robotics

Libraries for robotics.

■ PythonRobotics

This is a compilation of various robotics algorithms with visualizations.

<https://github.com/AtsushiSakai/PythonRobotics>

■ rospy

This is a library for ROS (Robot Operating System).

<http://wiki.ros.org/rospy>

RPC Servers

RPC-compatible servers.

■ RPyC

(Remote Python Call) - A transparent and symmetric RPC library for Python

<https://github.com/tomerfiliba/rpyc>

■ zeroRPC

zerorc is a flexible RPC implementation based on [ZeroMQ](http://zeromq.org/) and [MessagePack](http://msgpack.org/).

<https://github.com/0rpc/zerorpc-python>

Science

Libraries for scientific computing. Also see [Python-for-Scientists](#).

■ **astropy**

A community Python library for Astronomy.

<http://www.astropy.org/>

■ **bcbio-nextgen**

Providing best-practice pipelines for fully automated high throughput sequencing analysis.

<https://github.com/chapmanb/bcbio-nextgen>

■ **bccb**

Collection of useful code related to biological analysis.

<https://github.com/chapmanb/bcbb>

■ **Biopython**

Biopython is a set of freely available tools for biological computation.

http://biopython.org/wiki/Main_Page

■ **cclib**

A library for parsing and interpreting the results of computational chemistry packages.

<http://cclib.github.io/>

■ **Colour**

Implementing a comprehensive number of colour theory transformations and algorithms.

<http://colour-science.org/>

■ **Karate Club**

Unsupervised machine learning toolbox for graph structured data.

<https://github.com/benedekrozemberczki/karateclub>

■ **NetworkX**

A high-productivity software for complex networks.

<https://networkx.github.io/>

■ **NIPY**

A collection of neuroimaging toolkits.

<http://nipy.org>

■ NumPy

A fundamental package for scientific computing with Python.

<http://www.numpy.org/>

■ ObsPy

A Python toolbox for seismology.

<https://github.com/obspy/obspy/wiki/>

■ Open Babel

A chemical toolbox designed to speak the many languages of chemical data.

<https://open-babel.readthedocs.io/>

■ PyDy

Short for Python Dynamics, used to assist with workflow in the modeling of dynamic motion.

<http://www.pydy.org/>

■ PyMC

Markov Chain Monte Carlo sampling toolkit.

<https://github.com/pymc-devs/pymc3>

■ QuTiP

Quantum Toolbox in Python.

<http://qutip.org/>

■ RDKit

Cheminformatics and Machine Learning Software.

<http://www.rdkit.org/>

■ SciPy

A Python-based ecosystem of open-source software for mathematics, science, and engineering.

<https://www.scipy.org/>

■ SimPy

A process-based discrete-event simulation framework.

<https://gitlab.com/team-simpy/simpy>

■ statsmodels

Statistical modeling and econometrics in Python.

<https://github.com/statsmodels/statsmodels>

■ SymPy

A Python library for symbolic mathematics.

<https://github.com/sympy/sympy>

■ Zipline

A Pythonic algorithmic trading library.

<https://github.com/quantopian/zipline>

Search

Libraries and software for indexing and performing search queries on data.

■ django-haystack

Modular search for Django.

<https://github.com/django-haystack/django-haystack>

■ elasticsearch-dsl-py

The official high-level Python client for Elasticsearch.

<https://github.com/elastic/elasticsearch-dsl-py>

■ elasticsearch-py

The official low-level Python client for
[Elasticsearch](<https://www.elastic.co/products/elasticsearch>).

<https://www.elastic.co/guide/en/elasticsearch/client/pyth...>

■ pysolr

A lightweight Python wrapper for [Apache Solr](<https://lucene.apache.org/solr/>).

<https://github.com/django-haystack/pysolr>

■ whoosh

A fast, pure Python search engine library.

<http://whoosh.readthedocs.io/en/latest/>

Serialization

Libraries for serializing complex data types

■ marshmallow

A lightweight library for converting complex objects to and from simple Python datatypes.

<https://github.com/marshmallow-code/marshmallow>

■ **pysimdjson**

A Python bindings for [simdjson](https://github.com/lemire/simdjson).

<https://github.com/TkTech/pysimdjson>

■ **python-rapidjson**

A Python wrapper around [RapidJSON](https://github.com/Tencent/rapidjson).

<https://github.com/python-rapidjson/python-rapidjson>

■ **ultrajson**

A fast JSON decoder and encoder written in C with Python bindings.

<https://github.com/esnme/ultrajson>

Serverless Frameworks

Frameworks for developing serverless Python code.

■ **python-lambda**

A toolkit for developing and deploying Python code in AWS Lambda.

<https://github.com/nficano/python-lambda>

■ **Zappa**

A tool for deploying WSGI applications on AWS Lambda and API Gateway.

<https://github.com/zappa/Zappa>

Shell

Shells based on Python.

■ **xonsh**

A Python-powered, cross-platform, Unix-gazing shell language and command prompt.

<https://github.com/xonsh/xonsh/>

Specific Formats Processing

Libraries for parsing and manipulating specific text formats.

* General

■ **tablib**

A module for Tabular Datasets in XLS, CSV, JSON, YAML.

<https://github.com/jazzband/tablib>

* Office

■ **docxtpl**

Editing a docx document by jinja2 template

<https://github.com/emapouya/python-docx-template>

■ **openpyxl**

A library for reading and writing Excel 2010 xlsx/xlsm/xltx/xltm files.

<https://openpyxl.readthedocs.io/en/stable/>

■ **pyexcel**

Providing one API for reading, manipulating and writing csv, ods, xls, xlsx and xlsxm files.

<https://github.com/pyexcel/pyexcel>

■ **python-docx**

Reads, queries and modifies Microsoft Word 2007/2008 docx files.

<https://github.com/python-openxml/python-docx>

■ **python-pptx**

Python library for creating and updating PowerPoint (.pptx) files.

<https://github.com/scanny/python-pptx>

■ **unoconv**

Convert between any document format supported by LibreOffice/OpenOffice.

<https://github.com/unoconv/unoconv>

■ **XlsxWriter**

A Python module for creating Excel .xlsx files.

<https://github.com/jmcnamara/XlsxWriter>

■ **xlwings**

A BSD-licensed library that makes it easy to call Python from Excel and vice versa.

<https://github.com/ZoomerAnalytics/xlwings>

■ **xlwt**

/ [xlrd](<https://github.com/python-excel/xlrd>) - Writing and reading data and formatting information from Excel files.

<https://github.com/python-excel/xlwt>

* PDF

■ **pdfminer.six**

Pdfminer.six is a community maintained fork of the original PDFMiner.

<https://github.com/pdfminer/pdfminer.six>

■ **PyPDF2**

A library capable of splitting, merging and transforming PDF pages.

<https://github.com/mstamy2/PyPDF2>

■ **ReportLab**

Allowing Rapid creation of rich PDF documents.

<https://www.reportlab.com/opensource/>

* Markdown

■ **Mistune**

Fastest and full featured pure Python parsers of Markdown.

<https://github.com/lepture/mistune>

■ **Python-Markdown**

A Python implementation of John Gruber's Markdown.

<https://github.com/waylan/Python-Markdown>

* YAML

■ **PyYAML**

YAML implementations for Python.

<http://pyyaml.org/>

* CSV

■ **csvkit**

Utilities for converting to and working with CSV.

<https://github.com/wireservice/csvkit>

* Archive

■ **unp**

A command line tool that can unpack archives easily.

<https://github.com/mitsuhiko/unp>

Static Site Generator

Static site generator is a software that takes some text + templates as input and produces HTML files on the output.

■ **lektor**

An easy to use static CMS and blog engine.

<https://github.com/lektor/lektor>

■ **makesite**

Simple, lightweight, and magic-free static site/blog generator (< 130 lines).

<https://github.com/sunainapai/makesite>

■ **mkdocs**

Markdown friendly documentation generator.

<https://github.com/mkdocs/mkdocs/>

■ **nikola**

A static website and blog generator.

<https://github.com/getnikola/nikola>

■ **pelican**

Static site generator that supports Markdown and reST syntax.

<https://github.com/getpelican/pelican>

Tagging

Libraries for tagging items.

■ **django-taggit**

Simple tagging for Django.

<https://github.com/jazzband/django-taggit>

Task Queues

Libraries for working with task queues.

■ **celery**

An asynchronous task queue/job queue based on distributed message passing.

<https://docs.celeryproject.org/en/stable/>

■ **dramatiq**

A fast and reliable background task processing library for Python 3.

<https://github.com/Bogdanp/dramatiq>

■ huey

Little multi-threaded task queue.

<https://github.com/coleifer/huey>

■ mrq

A distributed worker task queue in Python using Redis & gevent.

<https://github.com/pricingassistant/mrq>

■ rq

Simple job queues for Python.

<https://github.com/rq/rq>

Template Engine

Libraries and tools for templating and lexing.

■ Genshi

Python templating toolkit for generation of web-aware output.

<https://genshi.edgewall.org/>

■ Jinja2

A modern and designer friendly templating language.

<https://github.com/pallets/jinja>

■ Mako

Hyperfast and lightweight templating for the Python platform.

<http://www.makotemplates.org/>

Testing

Libraries for testing codebases and generating test data.

* Testing Frameworks

■ hypothesis

Hypothesis is an advanced Quickcheck style property based testing library.

<https://github.com/HypothesisWorks/hypothesis>

■ nose2

The successor to `nose`, based on `unittest2`.

<https://github.com/nose-devs/nose2>

■ pytest

A mature full-featured Python testing tool.

<https://docs.pytest.org/en/latest/>

■ Robot Framework

A generic test automation framework.

<https://github.com/robotframework/robotframework>

■ unittest

(Python standard library) Unit testing framework.

<https://docs.python.org/3/library/unittest.html>

* Test Runners

■ green

A clean, colorful test runner.

<https://github.com/CleanCut/green>

■ mamba

The definitive testing tool for Python. Born under the banner of BDD.

<http://nestorsalceda.github.io/mamba/>

■ tox

Auto builds and tests distributions in multiple Python versions

<https://tox.readthedocs.io/en/latest/>

* GUI / Web Testing

■ locust

Scalable user load testing tool written in Python.

<https://github.com/locustio/locust>

■ PyAutoGUI

PyAutoGUI is a cross-platform GUI automation Python module for human beings.

<https://github.com/asweigart/pyautogui>

■ Schemathesis

A tool for automatic property-based testing of web applications built with Open API / Swagger specifications.

<https://github.com/kiwicom/schemathesis>

■ Selenium

Python bindings for [Selenium](http://www.seleniumhq.org/) WebDriver.

<https://pypi.org/project/selenium/>

■ sixpack

A language-agnostic A/B Testing framework.

<https://github.com/seatgeek/sixpack>

■ splinter

Open source tool for testing web applications.

<https://github.com/cobrateam/splinter>

* Mock

■ doublex

Powerful test doubles framework for Python.

<https://pypi.org/project/doublex/>

■ freezegun

Travel through time by mocking the datetime module.

<https://github.com/spulec/freezegun>

■ httmock

A mocking library for requests for Python 2.6+ and 3.2+.

<https://github.com/patrys/httmock>

■ httpretty

HTTP request mock tool for Python.

<https://github.com/gabrielfalcao/HTTPretty>

■ mock

(Python standard library) A mocking and patching library.

<https://docs.python.org/3/library/unittest.mock.html>

■ mocket

A socket mock framework with gevent/asyncio/SSL support.

<https://github.com/mindflayer/python-mocket>

■ responses

A utility library for mocking out the requests Python library.

<https://github.com/getsentry/responses>

■ **VCR.py**

Record and replay HTTP interactions on your tests.

<https://github.com/kevin1024/vcrpy>

* Object Factories

■ **factory_boy**

A test fixtures replacement for Python.

https://github.com/FactoryBoy/factory_boy

■ **mixer**

Another fixtures replacement. Supports Django, Flask, SQLAlchemy, Peewee and etc.

<https://github.com/klen/mixer>

■ **model_mommy**

Creating random fixtures for testing in Django.

https://github.com/vandersonmota/model_mommy

* Code Coverage

■ **coverage**

Code coverage measurement.

<https://pypi.org/project/coverage/>

* Fake Data

■ **fake2db**

Fake database generator.

<https://github.com/emirozer/fake2db>

■ **faker**

A Python package that generates fake data.

<https://github.com/joke2k/faker>

■ **mimesis**

is a Python library that help you generate fake data.

<https://github.com/lk-geimfari/mimesis>

■ **radar**

Generate random datetime / time.

<https://pypi.org/project/radar/>

Text Processing

Libraries for parsing and manipulating plain texts.

* General

■ **chardet**

Python 2/3 compatible character encoding detector.

<https://github.com/chardet/chardet>

■ **difflib**

(Python standard library) Helpers for computing deltas.

<https://docs.python.org/3/library/difflib.html>

■ **ftfy**

Makes Unicode text less broken and more consistent automagically.

<https://github.com/LuminosoInsight/python-ftfy>

■ **fuzzywuzzy**

Fuzzy String Matching.

<https://github.com/seatgeek/fuzzywuzzy>

■ **Levenshtein**

Fast computation of Levenshtein distance and string similarity.

<https://github.com/ztane/python-Levenshtein/>

■ **pangu.py**

Paranoid text spacing.

<https://github.com/vinta/pangu.py>

■ **pyfiglet**

An implementation of figlet written in Python.

<https://github.com/pwaller/pyfiglet>

■ **pypinyin**

Convert Chinese hanzi (中) to pinyin (中).

<https://github.com/mozillazg/python-pinyin>

■ **textdistance**

Compute distance between sequences with 30+ algorithms.

<https://github.com/orsinium/textdistance>

■ **unidecode**

ASCII transliterations of Unicode text.

<https://pypi.org/project/Unidecode/>

* Slugify

■ awesome-slugify

A Python slugify library that can preserve unicode.

<https://github.com/dimka665/awesome-slugify>

■ python-slugify

A Python slugify library that translates unicode to ASCII.

<https://github.com/un33k/python-slugify>

■ unicode-slugify

A slugifier that generates unicode slugs with Django as a dependency.

<https://github.com/mozilla/unicode-slugify>

* Unique identifiers

■ hashids

Implementation of [hashids](http://hashids.org) in Python.

<https://github.com/davidaurelio/hashids-python>

■ shortuuid

A generator library for concise, unambiguous and URL-safe UUIDs.

<https://github.com/skorokithakis/shortuuid>

* Parser

■ ply

Implementation of lex and yacc parsing tools for Python.

<https://github.com/dabeaz/ply>

■ pygments

A generic syntax highlighter.

<http://pygments.org/>

■ pyparsing

A general purpose framework for generating parsers.

<https://github.com/pyparsing/pyparsing>

■ python-nameparser

Parsing human names into their individual components.

<https://github.com/derek73/python-nameparser>

■ python-phonenumbers

Parsing, formatting, storing and validating international phone numbers.

<https://github.com/daviddrysdale/python-phonenumbers>

■ **python-user-agents**

Browser user agent parser.

<https://github.com/selwin/python-user-agents>

■ **sqlparse**

A non-validating SQL parser.

<https://github.com/andialbrecht/sqlparse>

Third-party APIs

Libraries for accessing third party services APIs. Also see [List of Python API Wrappers and Libraries](#).

■ **apache-libcloud**

One Python library for all clouds.

<https://libcloud.apache.org/>

■ **boto3**

Python interface to Amazon Web Services.

<https://github.com/boto/boto3>

■ **django-wordpress**

WordPress models and views for Django.

<https://github.com/istrategylabs/django-wordpress>

■ **facebook-sdk**

Facebook Platform Python SDK.

<https://github.com/mobolic/facebook-sdk>

■ **google-api-python-client**

Google APIs Client Library for Python.

<https://github.com/google/google-api-python-client>

■ **gspread**

Google Spreadsheets Python API.

<https://github.com/burnash/gspread>

■ **twython**

A Python wrapper for the Twitter API.

<https://github.com/ryanmcgrath/twython>

URL Manipulation

Libraries for parsing URLs.

■ furl

A small Python library that makes parsing and manipulating URLs easy.

<https://github.com/gruns/furl>

■ purl

A simple, immutable URL class with a clean API for interrogation and manipulation.

<https://github.com/codeinthehole/purl>

■ pyshorteners

A pure Python URL shortening lib.

<https://github.com/ellisonleao/pyshorteners>

■ webargs

A friendly library for parsing HTTP request arguments with built-in support for popular web frameworks.

<https://github.com/marshmallow-code/webargs>

Video

Libraries for manipulating video and GIFs.

■ moviepy

A module for script-based movie editing with many formats, including animated GIFs.

<https://zulko.github.io/moviepy/>

■ scikit-video

Video processing routines for SciPy.

<https://github.com/aizvorski/scikit-video>

■ vidgear

Most Powerful multi-threaded Video Processing framework.

<https://github.com/abhiTronix/vidgear>

Web Asset Management

Tools for managing, compressing and minifying website assets.

■ **django-compressor**

Compresses linked and inline JavaScript or CSS into a single cached file.

<https://github.com/django-compressor/django-compressor>

■ **django-pipeline**

An asset packaging library for Django.

<https://github.com/jazzband/django-pipeline>

■ **django-storages**

A collection of custom storage back ends for Django.

<https://github.com/jschneier/django-storages>

■ **fanstatic**

Packages, optimizes, and serves static file dependencies as Python packages.

<http://www.fanstatic.org/en/latest/>

■ **fileconveyor**

A daemon to detect and sync files to CDNs, S3 and FTP.

<http://wimleers.com/fileconveyor>

■ **flask-assets**

Helps you integrate webassets into your Flask app.

<https://github.com/miracle2k/flask-assets>

■ **webassets**

Bundles, optimizes, and manages unique cache-busting URLs for static resources.

<https://github.com/miracle2k/webassets>

Web Content Extracting

Libraries for extracting web contents.

■ **html2text**

Convert HTML to Markdown-formatted text.

<https://github.com/Alir3z4/html2text>

■ **lassie**

Web Content Retrieval for Humans.

<https://github.com/michaelhelmick/lassie>

■ **micawber**

A small library for extracting rich content from URLs.

<https://github.com/coleifer/micawber>

■ newspaper

News extraction, article extraction and content curation in Python.

<https://github.com/codelucas/newspaper>

■ python-readability

Fast Python port of arc90's readability tool.

<https://github.com/buriy/python-readability>

■ requests-html

Pythonic HTML Parsing for Humans.

<https://github.com/psf/requests-html>

■ sumy

A module for automatic summarization of text documents and HTML pages.

<https://github.com/miso-belica/sumy>

■ textract

Extract text from any document, Word, PowerPoint, PDFs, etc.

<https://github.com/deanmalmgren/textract>

■ toapi

Every web site provides APIs.

<https://github.com/gaojiuli/toapi>

Web Crawling

Libraries to automate web scraping.

■ feedparser

Universal feed parser.

<https://github.com/kurtmckee/feedparser>

■ grab

Site scraping framework.

<https://github.com/orien/grab>

■ mechanicalsoup

A Python library for automating interaction with websites.

<https://github.com/MechanicalSoup/MechanicalSoup>

■ scrapy

A fast high-level screen scraping and web crawling framework.

<https://github.com/scrapy/scrapy>

Web Frameworks

Traditional full stack web frameworks. Also see [RESTful API](#).

* Synchronous

■ django

The most popular web framework in Python.

<https://github.com/django/django>

■ awesome-django

<https://github.com/shahraizali/awesome-django>

■ awesome-django

<https://github.com/wsvincent/awesome-django>

■ flask

A microframework for Python.

<https://github.com/pallets/flask>

■ awesome-flask

<https://github.com/humiaozuzu/awesome-flask>

■ pyramid

A small, fast, down-to-earth, open source Python web framework.

<https://pylonsproject.org/>

■ awesome-pyramid

<https://github.com/uralbash/awesome-pyramid>

■ masonite

The modern and developer centric Python web framework.

<https://github.com/MasoniteFramework/masonite>

* Asynchronous

■ tornado

A web framework and asynchronous networking library.

<https://github.com/tornadoweb/tornado>

WebSocket

Libraries for working with WebSocket.

■ autobahn-python

WebSocket & WAMP for Python on Twisted and [asyncio](<https://docs.python.org/3/library/asyncio.html>).

<https://github.com/crossbario/autobahn-python>

■ channels

Developer-friendly asynchrony for Django.

<https://github.com/django/channels>

■ websockets

A library for building WebSocket servers and clients with a focus on correctness and simplicity.

<https://github.com/augustin/websockets>

WSGI Servers

WSGI-compatible web servers.

■ gunicorn

Pre-forked, ported from Ruby's Unicorn project.

<https://github.com/benoitc/gunicorn>

■ uwsgi

A project aims at developing a full stack for building hosting services, written in C.

<https://uwsgi-docs.readthedocs.io/en/latest/>

■ waitress

Multi-threaded, powers Pyramid.

<https://github.com/Pylons/waitress>

■ werkzeug

A WSGI utility library for Python that powers Flask and can easily be embedded into your own

projects.

<https://github.com/pallets/werkzeug>

Resources

Where to discover learning resources or new Python libraries.

Newsletters

■ **Awesome Python Newsletter**

<http://python.libhunt.com/newsletter>

■ **Pycoder's Weekly**

<https://pycoders.com/>

■ **Python Tricks**

<https://realpython.com/python-tricks/>

■ **Python Weekly**

<https://www.pythonweekly.com/>

Podcasts

■ **Django Chat**

<https://djangochat.com/>

■ **Python Bytes**

<https://pythonbytes.fm>

■ **Python Test**

<https://podcast.pythontest.com/>

■ Talk Python To Me

<https://talkpython.fm/>

■ The Real Python Podcast

<https://realpython.com/podcasts/rpp/>

Contributing

Your contributions are always welcome! Please take a look at the [contribution guidelines](#) first.

If you have any question about this opinionated list, do not hesitate to contact me [@VintaChen](#) on Twitter or open an issue on GitHub.

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