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

■ wooey
A Django app which creates automatic web UIs for Python scripts.
https://github.com/wooey/wooey

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/carlosescri/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

■ tesserocr

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

https://github.com/sirfz/tesserocr

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/Parsely/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/ytdl-org/youtube-dl/

Editor Plugins and IDEs

* Emacs

■ **elpy**

Emacs Python Development Environment.

https://github.com/jorgenschaefer/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/zoofIO/flexx

■ Gooey

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

https://github.com/chriskiehl/Gooey

■ kivy

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

https://kivy.org/

■ pyglet

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/emcconville/wand

Implementations

Implementations of Python.

■ clpython

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

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

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/elapouya/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 xlsm 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 (■■) to pinyin (■■).

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/lorien/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/aaugustin/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.

Document Generation Complete

This document was automatically generated from README.md using a premium Python script. The content includes a curated list of awesome Python frameworks, libraries, and software. **Statistics:**
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