

Awesome Python

[<https://github.com/sindresorhus/awesome>]

A curated list of awesome Python frameworks, libraries, software and resources.

Inspired by [awesome-php](https://github.com/ziadoz/awesome-php) [<https://github.com/ziadoz/awesome-php>].

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Admin Panels

Libraries for administrative interfaces.

- [ajenti](https://github.com/ajenti/ajenti) [https://github.com/ajenti/ajenti] - The admin panel your servers deserve.
- [django-grappelli](https://grappelliproject.com/) [https://grappelliproject.com/] - A jazzy skin for the Django Admin-Interface.
- [django-jet](https://github.com/geex-arts/django-jet) [https://github.com/geex-arts/django-jet] - Modern responsive template for the Django admin interface with improved functionality.
- [django-suit](https://djangosuit.com/) [https://djangosuit.com/] - Alternative Django Admin-Interface (free only for Non-commercial use).
- [django-xadmin](https://github.com/sshwsfc/xadmin) [https://github.com/sshwsfc/xadmin] - Drop-in replacement of Django admin comes with lots of goodies.
- [flask-admin](https://github.com/flask-admin/flask-admin) [https://github.com/flask-admin/flask-admin] - Simple and extensible administrative interface framework for Flask.
- [flower](https://github.com/mher/flower) [https://github.com/mher/flower] - Real-time monitor and web admin for Celery.
- [jet-bridge](https://github.com/jet-admin/jet-bridge) [https://github.com/jet-admin/jet-bridge] - Admin panel framework for any application with nice UI (ex Jet Django)
- [wooeey](https://github.com/wooeey/wooeey) [https://github.com/wooeey/wooeey] - A Django app which creates automatic web UIs for Python scripts.

Algorithms and Design Patterns

Python implementation of data structures, algorithms and design patterns. Also see [awesome-algorithms](https://github.com/tayllan/awesome-algorithms) [https://github.com/tayllan/awesome-algorithms].

- Algorithms
 - [algorithms](https://github.com/keon/algorithms) [https://github.com/keon/algorithms] - Minimal examples of data structures and algorithms.
 - [python-ds](https://github.com/prabhupant/python-ds) [https://github.com/prabhupant/python-ds] - A collection of data structure and algorithms for coding interviews.
 - [sortedcontainers](https://github.com/grantjenks/python-sortedcontainers) [https://github.com/grantjenks/python-sortedcontainers] - Fast and pure-Python implementation of sorted collections.
 - [TheAlgorithms](https://github.com/TheAlgorithms/Python) [https://github.com/TheAlgorithms/Python] - All Algorithms implemented in Python.
- Design Patterns
 - [PyPattyrn](https://github.com/tylerlaberge/PyPattyrn) [https://github.com/tylerlaberge/PyPattyrn] - A simple yet effective library for implementing common design patterns.
 - [python-patterns](https://github.com/faif/python-patterns) [https://github.com/faif/python-patterns] - A collection of design patterns in Python.
 - [transitions](https://github.com/pytransitions/transitions) [https://github.com/pytransitions/transitions] - A lightweight, object-oriented finite state machine implementation.

ASGI Servers

[ASGI](https://asgi.readthedocs.io/en/latest/) [https://asgi.readthedocs.io/en/latest/] - compatible web servers.

- [daphne](https://github.com/django/daphne) [https://github.com/django/daphne] - A HTTP, HTTP2 and WebSocket protocol server for ASGI and ASGI-HTTP.
- [uvicorn](https://github.com/encode/uvicorn) [https://github.com/encode/uvicorn] - A lightning-fast ASGI server implementation, using uvloop and httptools.

Asynchronous Programming

- **asyncio** [<https://docs.python.org/3/library/asyncio.html>] - (Python standard library) Asynchronous I/O, event loop, coroutines and tasks.
 - **awesome-asyncio** [<https://github.com/timofurrer/awesome-asyncio>]
- **trio** [<https://github.com/python-trio/trio>] - A friendly library for async concurrency and I/O.
- **Twisted** [<https://twistedmatrix.com/trac/>] - An event-driven networking engine.
- **uvloop** [<https://github.com/MagicStack/uvloop>] - Ultra fast asyncio event loop.

Audio

Libraries for manipulating audio and its metadata.

- Audio
 - **audioread** [<https://github.com/beetbox/audioread>] - Cross-library (GStreamer + Core Audio + MAD + FFmpeg) audio decoding.
 - **dejavu** [<https://github.com/worldveil/dejavu>] - Audio fingerprinting and recognition.
 - **kapre** [<https://github.com/keunwoochoi/kapre>] - Keras Audio Preprocessors
 - **librosa** [<https://github.com/librosa/librosa>] - Python library for audio and music analysis
 - **matchering** [<https://github.com/sergree/matchering>] - A library for automated reference audio mastering.
 - **mingus** [<https://bspaans.github.io/python-mingus/>] - An advanced music theory and notation package with MIDI file and playback support.
 - **pyAudioAnalysis** [<https://github.com/tyiannak/pyAudioAnalysis>] - Audio feature extraction, classification, segmentation and applications.
 - **pydub** [<https://github.com/jiaaro/pydub>] - Manipulate audio with a simple and easy high level interface.

- **TimeSide** [<https://github.com/Parisson/TimeSide>] - Open web audio processing framework.
- Metadata
 - **beets** [<https://github.com/beetbox/beets>] - A music library manager and **MusicBrainz** [<https://musicbrainz.org/>] tagger.
 - **eyeD3** [<https://github.com/nicfit/eyeD3>] - A tool for working with audio files, specifically MP3 files containing ID3 metadata.
 - **mutagen** [<https://github.com/quodlibet/mutagen>] - A Python module to handle audio metadata.
 - **tinytag** [<https://github.com/devsnd/tinytag>] - A library for reading music meta data of MP3, OGG, FLAC and Wave files.

Authentication

Libraries for implementing authentications schemes.

- OAuth
 - **authlib** [<https://github.com/lepture/authlib>] - JavaScript Object Signing and Encryption draft implementation.
 - **django-allauth** [<https://github.com/pennersr/django-allauth>] - Authentication app for Django that "just works."
 - **django-oauth-toolkit** [<https://github.com/evonove/django-oauth-toolkit>] - OAuth 2 goodies for Django.
 - **oauthlib** [<https://github.com/idan/oauthlib>] - A generic and thorough implementation of the OAuth request-signing logic.
 - **python-oauth2** [<https://github.com/joestump/python-oauth2>] - A fully tested, abstract interface to creating OAuth clients and servers.
 - **python-social-auth** [<https://github.com/omab/python-social-auth>] - An easy-to-setup social authentication mechanism.

- JWT
 - **pyjwt** [<https://github.com/jpadilla/pyjwt>] - JSON Web Token implementation in Python.
 - **python-jose** [<https://github.com/mpdavis/python-jose/>] - A JOSE implementation in Python.
 - **python-jwt** [<https://github.com/davedoesdev/python-jwt>] - A module for generating and verifying JSON Web Tokens.

Build Tools

Compile software from source code.

- **BitBake** [<https://www.yoctoproject.org/docs/1.6/bitbake-user-manual/bitbake-user-manual.html>] - A make-like build tool for embedded Linux.
- **buildout** [<http://www.buildout.org/en/latest/>] - A build system for creating, assembling and deploying applications from multiple parts.
- **PlatformIO** [<https://github.com/platformio/platformio-core>] - A console tool to build code with different development platforms.
- **pybuilder** [<https://github.com/pybuilder/pybuilder>] - A continuous build tool written in pure Python.
- **SCons** [<http://www.scons.org/>] - A software construction tool.

Built-in Classes Enhancement

Libraries for enhancing Python built-in classes.

- **attrs** [<https://github.com/python-attrs/attrs>] - Replacement for `__init__`, `__eq__`, `__repr__`, etc. boilerplate in class definitions.
- **bidict** [<https://github.com/jab/bidict>] - Efficient, Pythonic bidirectional map data structures and related functionality..

- **Box** [<https://github.com/cdgriffith/Box>] - Python dictionaries with advanced dot notation access.
- **dataclasses** [<https://docs.python.org/3/library/dataclasses.html>] - (Python standard library) Data classes.
- **DottedDict** [<https://github.com/carlosescri/DottedDict>] - A library that provides a method of accessing lists and dicts with a dotted path notation.

CMS

Content Management Systems.

- **django-cms** [<https://www.django-cms.org/en/>] - An Open source enterprise CMS based on the Django.
- **feincms** [<https://github.com/feincms/feincms>] - One of the most advanced Content Management Systems built on Django.
- **indico** [<https://github.com/indico/indico>] - A feature-rich event management system, made @ **CERN** [<https://en.wikipedia.org/wiki/CERN>].
- **Kotti** [<https://github.com/Kotti/Kotti>] - A high-level, Pythonic web application framework built on Pyramid.
- **mezzanine** [<https://github.com/stephenmcd/mezzanine>] - A powerful, consistent, and flexible content management platform.
- **plone** [<https://plone.org/>] - A CMS built on top of the open source application server Zope.
- **quokka** [<https://github.com/rochacbruno/quokka>] - Flexible, extensible, small CMS powered by Flask and MongoDB.
- **wagtail** [<https://wagtail.io/>] - A Django content management system.

Caching

Libraries for caching data.

- **beaker** [<https://github.com/bbangert/beaker>] - A WSGI middleware for sessions and caching.
- **django-cache-machine** [<https://github.com/django-cache-machine/django-cache-machine>] - Automatic caching and invalidation for Django models.
- **django-cacheops** [<https://github.com/Suor/django-cacheops>] - A slick ORM cache with automatic granular event-driven invalidation.
- **dogpile.cache** [<https://dogpilecache.readthedocs.io/en/latest/>] - dogpile.cache is next generation replacement for Beaker made by same authors.
- **HermesCache** [<https://pypi.org/project/HermesCache/>] - Python caching library with tag-based invalidation and dogpile effect prevention.
- **pylibmc** [<https://github.com/lericson/pylibmc>] - A Python wrapper around the **libmemcached** [<https://libmemcached.org/libMemcached.html>] interface.
- **python-diskcache** [<http://www.grantjenks.com/docs/diskcache/>] - SQLite and file backed cache backend with faster lookups than memcached and redis.

ChatOps Tools

Libraries for chatbot development.

- **errbot** [<https://github.com/errbotio/errbot/>] - The easiest and most popular chatbot to implement ChatOps.

Code Analysis

*Tools of static analysis, linters and code quality checkers. Also see **awesome-static-analysis** [<https://github.com/mre/awesome-static-analysis>].*

- Code Analysis
 - **coala** [<https://github.com/coala/coala/>] - Language independent and easily extendable code analysis application.

- **code2flow** [<https://github.com/scottrogowski/code2flow>] - Turn your Python and JavaScript code into DOT flowcharts.
- **prospector** [<https://github.com/PyCQA/prospector>] - A tool to analyse Python code.
- **pycallgraph** [<https://github.com/gak/pycallgraph>] - A library that visualises the flow (call graph) of your Python application.
- **vulture** [<https://github.com/jendrikseipp/vulture>] - A tool for finding and analysing dead Python code.
- Code Linters
 - **flake8** [<https://pypi.org/project/flake8/>] - A wrapper around `pycodestyle`, `pyflakes` and McCabe.
 - **awesome-flake8-extensions** [<https://github.com/DmytroLitvinov/awesome-flake8-extensions>]
 - **pylama** [<https://github.com/klen/pylama>] - A code audit tool for Python and JavaScript.
 - **pylint** [<https://www.pylint.org/>] - A fully customizable source code analyzer.
 - **wemake-python-styleguide** [<https://github.com/wemake-services/wemake-python-styleguide>] - The strictest and most opinionated python linter ever.
- Code Formatters
 - **black** [<https://github.com/python/black>] - The uncompromising Python code formatter.
 - **isort** [<https://github.com/timothycrosley/isort>] - A Python utility / library to sort imports.
 - **yapf** [<https://github.com/google/yapf>] - Yet another Python code formatter from Google.
- Static Type Checkers, also see **awesome-python-typing** [<https://github.com/typeddjango/awesome-python-typing>]
 - **mypy** [<http://mypy-lang.org/>] - Check variable types during compile time.

- [pyre-check](https://github.com/facebook/pyre-check) [https://github.com/facebook/pyre-check] - Performant type checking.
- [typeshed](https://github.com/python/typeshed) [https://github.com/python/typeshed] - Collection of library stubs for Python, with static types.
- Static Type Annotations Generators
 - [MonkeyType](https://github.com/Instagram/MonkeyType) [https://github.com/Instagram/MonkeyType] - A system for Python that generates static type annotations by collecting runtime types.
 - [pyannotate](https://github.com/dropbox/pyannotate) [https://github.com/dropbox/pyannotate] - Auto-generate PEP-484 annotations.
 - [pytype](https://github.com/google/pytype) [https://github.com/google/pytype] - Pytype checks and infers types for Python code - without requiring type annotations.

Command-line Interface Development

Libraries for building command-line applications.

- Command-line Application Development
 - [cement](http://builtoncement.com/) [http://builtoncement.com/] - CLI Application Framework for Python.
 - [click](http://click.pocoo.org/dev/) [http://click.pocoo.org/dev/] - A package for creating beautiful command line interfaces in a composable way.
 - [cliff](https://docs.openstack.org/developer/cliff/) [https://docs.openstack.org/developer/cliff/] - A framework for creating command-line programs with multi-level commands.
 - [docopt](http://docopt.org/) [http://docopt.org/] - Pythonic command line arguments parser.
 - [python-fire](https://github.com/google/python-fire) [https://github.com/google/python-fire] - A library for creating command line interfaces from absolutely any Python object.
 - [python-prompt-toolkit](https://github.com/jonathanslenders/python-prompt-toolkit) [https://github.com/jonathanslenders/python-prompt-toolkit] - A library for building powerful interactive command lines.
- Terminal Rendering

- **alive-progress** [<https://github.com/rsalmei/alive-progress>] - A new kind of Progress Bar, with real-time throughput, eta and very cool animations.
- **asciimatics** [<https://github.com/peterbrittain/asciimatics>] - A package to create full-screen text UIs (from interactive forms to ASCII animations).
- **bashplotlib** [<https://github.com/glamp/bashplotlib>] - Making basic plots in the terminal.
- **colorama** [<https://pypi.org/project/colorama/>] - Cross-platform colored terminal text.
- **rich** [<https://github.com/willmcgugan/rich>] - Python library for rich text and beautiful formatting in the terminal. Also provides a great `RichHandler` log handler.
- **tqdm** [<https://github.com/tqdm/tqdm>] - Fast, extensible progress bar for loops and CLI.

Command-line Tools

Useful CLI-based tools for productivity.

- Productivity Tools
 - **cookiecutter** [<https://github.com/audreyr/cookiecutter>] - A command-line utility that creates projects from cookiecutters (project templates).
 - **copier** [<https://github.com/pykong/copier>] - A library and command-line utility for rendering projects templates.
 - **doitlive** [<https://github.com/sloria/doitlive>] - A tool for live presentations in the terminal.
 - **howdoi** [<https://github.com/gleitz/howdoi>] - Instant coding answers via the command line.
 - **Invoke** [<https://github.com/pyinvoke/invoke#readme>] - A tool for managing shell-oriented subprocesses and organizing executable Python code into CLI-invokable tasks.

- **PathPicker** [<https://github.com/facebook/PathPicker>] - Select files out of bash output.
- **percol** [<https://github.com/mooz/percol>] - Adds flavor of interactive selection to the traditional pipe concept on UNIX.
- **thefuck** [<https://github.com/nvbn/thefuck>] - Correcting your previous console command.
- **tmuxp** [<https://github.com/tony/tmuxp>] - A **tmux** [<https://github.com/tmux/tmux>] session manager.
- **try** [<https://github.com/timofurrer/try>] - A dead simple CLI to try out python packages - it's never been easier.
- CLI Enhancements
 - **httpie** [<https://github.com/jakubroztocil/httpie>] - A command line HTTP client, a user-friendly cURL replacement.
 - **iredis** [<https://github.com/laixintao/iredis>] - Redis CLI with autocompletion and syntax highlighting.
 - **kube-shell** [<https://github.com/cloudnativelabs/kube-shell>] - An integrated shell for working with the Kubernetes CLI.
 - **litecli** [<https://github.com/dbcli/litecli>] - SQLite CLI with autocompletion and syntax highlighting.
 - **mycli** [<https://github.com/dbcli/mycli>] - MySQL CLI with autocompletion and syntax highlighting.
 - **pgcli** [<https://github.com/dbcli/pgcli>] - PostgreSQL CLI with autocompletion and syntax highlighting.
 - **saws** [<https://github.com/donnemartin/saws>] - A Supercharged **aws-cli** [<https://github.com/aws/aws-cli>].

Compatibility

Libraries for migrating from Python 2 to 3.

- **modernize** [<https://github.com/PyCQA/modernize>] - Modernizes Python code for eventual Python 3 migration.
- **python-future** [<http://python-future.org/index.html>] - The missing compatibility layer between Python 2 and Python 3.
- **six** [<https://pypi.org/project/six/>] - Python 2 and 3 compatibility utilities.

Computer Vision

Libraries for Computer Vision.

- **EasyOCR** [<https://github.com/JaidedAI/EasyOCR>] - Ready-to-use OCR with 40+ languages supported.
- **Face Recognition** [https://github.com/ageitgey/face_recognition] - Simple facial recognition library.
- **Kornia** [<https://github.com/kornia/kornia/>] - Open Source Differentiable Computer Vision Library for PyTorch.
- **OpenCV** [<https://opencv.org/>] - Open Source Computer Vision Library.
- **pytesseract** [<https://github.com/madmaze/pytesseract>] - A wrapper for **Google Tesseract OCR** [<https://github.com/tesseract-ocr>].
- **SimpleCV** [<https://github.com/sightmachine/SimpleCV>] - An open source framework for building computer vision applications.
- **tesseractocr** [<https://github.com/sirfz/tesseractocr>] - Another simple, Pillow-friendly, wrapper around the `tesseract-ocr` API for OCR.

Concurrency and Parallelism

*Libraries for concurrent and parallel execution. Also see **awesome-asyncio** [<https://github.com/timofurrer/awesome-asyncio>].*

- **concurrent.futures** [<https://docs.python.org/3/library/concurrent.futures.html>] - (Python standard library) A high-level interface for asynchronously executing

callable.

- **eventlet** [<http://eventlet.net/>] - Asynchronous framework with WSGI support.
- **gevent** [<http://www.gevent.org/>] - A coroutine-based Python networking library that uses **greenlet** [<https://github.com/python-greenlet/greenlet>].
- **multiprocessing** [<https://docs.python.org/3/library/multiprocessing.html>] - (Python standard library) Process-based parallelism.
- **scoop** [<https://github.com/soravux/scoop>] - Scalable Concurrent Operations in Python.
- **uvloop** [<https://github.com/MagicStack/uvloop>] - Ultra fast implementation of **asyncio** event loop on top of **libuv**.

Configuration

Libraries for storing and parsing configuration options.

- **configobj** [<https://github.com/DiffSK/configobj>] - INI file parser with validation.
- **configparser** [<https://docs.python.org/3/library/configparser.html>] - (Python standard library) INI file parser.
- **hydra** [<https://github.com/facebookresearch/hydra>] - Hydra is a framework for elegantly configuring complex applications.
- **profig** [<https://profig.readthedocs.io/en/latest/>] - Config from multiple formats with value conversion.
- **python-decouple** [<https://github.com/henriquebastos/python-decouple>] - Strict separation of settings from code.

Cryptography

- **cryptography** [<https://cryptography.io/en/latest/>] - A package designed to expose cryptographic primitives and recipes to Python developers.

- **paramiko** [<https://github.com/paramiko/paramiko>] - The leading native Python SSHv2 protocol library.
- **passlib** [<https://passlib.readthedocs.io/en/stable/>] - Secure password storage/hashing library, very high level.
- **pynacl** [<https://github.com/pyca/pynacl>] - Python binding to the Networking and Cryptography (NaCl) library.

Data Analysis

Libraries for data analyzing.

- **AWS Data Wrangler** [<https://github.com/awslabs/aws-data-wrangler>] - Pandas on AWS.
- **Blaze** [<https://github.com/blaze/blaze>] - NumPy and Pandas interface to Big Data.
- **Open Mining** [<https://github.com/mining/mining>] - Business Intelligence (BI) in Pandas interface.
- **Optimus** [<https://github.com/ironmussa/Optimus>] - Agile Data Science Workflows made easy with PySpark.
- **Orange** [<https://orange.biolab.si/>] - Data mining, data visualization, analysis and machine learning through visual programming or scripts.
- **Pandas** [<https://pandas.pydata.org/>] - A library providing high-performance, easy-to-use data structures and data analysis tools.

Data Validation

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

- **Cerberus** [<https://github.com/pyeve/cerberus>] - A lightweight and extensible data validation library.

- **colander** [<https://docs.pylonsproject.org/projects/colander/en/latest/>] - Validating and deserializing data obtained via XML, JSON, an HTML form post.
- **jsonschema** [<https://github.com/Julian/jsonschema>] - An implementation of **JSON Schema** [<https://json-schema.org/>] for Python.
- **schema** [<https://github.com/keleshev/schema>] - A library for validating Python data structures.
- **Schematics** [<https://github.com/schematics/schematics>] - Data Structure Validation.
- **valideer** [<https://github.com/podio/valideer>] - Lightweight extensible data validation and adaptation library.
- **voluptuous** [<https://github.com/alecthomas/voluptuous>] - A Python data validation library.

Data Visualization

*Libraries for visualizing data. Also see **awesome-javascript** [<https://github.com/sorrycc/awesome-javascript#data-visualization>].*

- **Altair** [<https://github.com/altair-viz/altair>] - Declarative statistical visualization library for Python.
- **Bokeh** [<https://github.com/bokeh/bokeh>] - Interactive Web Plotting for Python.
- **bqplot** [<https://github.com/bloomberg/bqplot>] - Interactive Plotting Library for the Jupyter Notebook
- **Cartopy** [<https://github.com/SciTools/cartopy>] - A cartographic python library with matplotlib support
- **Dash** [<https://plot.ly/products/dash/>] - Built on top of Flask, React and Plotly aimed at analytical web applications.
 - **awesome-dash** [<https://github.com/Acrotrend/awesome-dash>]
- **diagrams** [<https://github.com/mingrammer/diagrams>] - Diagram as Code.

- **Matplotlib** [<https://matplotlib.org/>] - A Python 2D plotting library.
- **plotnine** [<https://github.com/has2k1/plotnine>] - A grammar of graphics for Python based on ggplot2.
- **Pygal** [<http://www.pygal.org/en/latest/>] - A Python SVG Charts Creator.
- **PyGraphviz** [<https://pypi.org/project/pygraphviz/>] - Python interface to **Graphviz** [<https://www.graphviz.org/>].
- **PyQtGraph** [<http://www.pyqtgraph.org/>] - Interactive and realtime 2D/3D/Image plotting and science/engineering widgets.
- **Seaborn** [<https://github.com/mwaskom/seaborn>] - Statistical data visualization using Matplotlib.
- **VisPy** [<https://github.com/vispy/vispy>] - High-performance scientific visualization based on OpenGL.

Database

Databases implemented in Python.

- **pickleDB** [<https://github.com/patx/pickledb>] - A simple and lightweight key-value store for Python.
- **tinydb** [<https://github.com/msiemens/tinydb>] - A tiny, document-oriented database.
- **ZODB** [<https://github.com/zopefoundation/ZODB>] - A native object database for Python. A key-value and object graph database.

Database Drivers

Libraries for connecting and operating databases.

- MySQL - **awesome-mysql** [<https://shlomi-noach.github.io/awesome-mysql/>]

- **mysqlclient** [<https://github.com/PyMySQL/mysqlclient-python>] - MySQL connector with Python 3 support (**mysql-python** [<https://sourceforge.net/projects/mysql-python/>] fork).
- **PyMySQL** [<https://github.com/PyMySQL/PyMySQL>] - A pure Python MySQL driver compatible to mysql-python.
- PostgreSQL - **awesome-postgres** [<https://github.com/dhamaniasad/awesome-postgres>]
 - **psycopg2** [<http://initd.org/psycopg/>] - The most popular PostgreSQL adapter for Python.
 - **queries** [<https://github.com/gmr/queries>] - A wrapper of the psycopg2 library for interacting with PostgreSQL.
- SQLite - **awesome-sqlite** [<https://github.com/planetopendata/awesome-sqlite>]
 - **sqlite3** [<https://docs.python.org/3/library/sqlite3.html>] - (Python standard library) SQLite interface compliant with DB-API 2.0
 - **SuperSQLite** [<https://github.com/plasticityai/supersqlite>] - A supercharged SQLite library built on top of **apsw** [<https://github.com/rogerbinns/apsw>].
- Other Relational Databases
 - **clickhouse-driver** [<https://github.com/mymarilyn/clickhouse-driver>] - Python driver with native interface for ClickHouse.
 - **pymssql** [<https://pymssql.readthedocs.io/en/latest/>] - A simple database interface to Microsoft SQL Server.
- NoSQL Databases
 - **cassandra-driver** [<https://github.com/datastax/python-driver>] - The Python Driver for Apache Cassandra.
 - **happybase** [<https://github.com/wbolster/happybase>] - A developer-friendly library for Apache HBase.
 - **kafka-python** [<https://github.com/dpkp/kafka-python>] - The Python client for Apache Kafka.

- **py2neo** [<https://py2neo.org/>] - A client library and toolkit for working with Neo4j.
- **pymongo** [<https://github.com/mongodb/mongo-python-driver>] - The official Python client for MongoDB.
- **redis-py** [<https://github.com/andymccurdy/redis-py>] - The Python client for Redis.
- Asynchronous Clients
 - **motor** [<https://github.com/mongodb/motor>] - The async Python driver for MongoDB.

Date and Time

Libraries for working with dates and times.

- **Arrow** [<https://arrow.readthedocs.io/en/latest/>] - A Python library that offers a sensible and human-friendly approach to creating, manipulating, formatting and converting dates, times and timestamps.
- **Chronyk** [<https://github.com/KoffeinFlummi/Chronyk>] - A Python 3 library for parsing human-written times and dates.
- **dateutil** [<https://github.com/dateutil/dateutil>] - Extensions to the standard Python **datetime** [<https://docs.python.org/3/library/datetime.html>] module.
- **delorean** [<https://github.com/myusuf3/delorean/>] - A library for clearing up the inconvenient truths that arise dealing with datetimes.
- **maya** [<https://github.com/timofurrer/maya>] - Datetimes for Humans.
- **moment** [<https://github.com/zachwill/moment>] - A Python library for dealing with dates/times. Inspired by **Moment.js** [<http://momentjs.com/>].
- **Pendulum** [<https://github.com/sdispater/pendulum>] - Python datetimes made easy.
- **PyTime** [<https://github.com/shinux/PyTime>] - An easy-to-use Python module which aims to operate date/time/datetime by string.

- **pytz** [<https://launchpad.net/pytz>] - World timezone definitions, modern and historical. Brings the **tz database** [https://en.wikipedia.org/wiki/Tz_database] into Python.
- **when.py** [<https://github.com/dirn/When.py>] - Providing user-friendly functions to help perform common date and time actions.

Debugging Tools

Libraries for debugging code.

- pdb-like Debugger
 - **ipdb** [<https://github.com/gotcha/ipdb>] - IPython-enabled **pdb** [<https://docs.python.org/3/library/pdb.html>].
 - **pdb++** [<https://github.com/antocuni/pdb>] - Another drop-in replacement for **pdb**.
 - **puddb** [<https://github.com/inducer/puddb>] - A full-screen, console-based Python debugger.
 - **wdb** [<https://github.com/Kozea/wdb>] - An improbable web debugger through WebSockets.
- Tracing
 - **lptrace** [<https://github.com/khamidou/lptrace>] - **strace** [<http://man7.org/linux/man-pages/man1/strace.1.html>] for Python programs.
 - **manhole** [<https://github.com/ionelmc/python-manhole>] - Debugging UNIX socket connections and present the stacktraces for all threads and an interactive prompt.
 - **pyringe** [<https://github.com/google/pyringe>] - Debugger capable of attaching to and injecting code into Python processes.
 - **python-hunter** [<https://github.com/ionelmc/python-hunter>] - A flexible code tracing toolkit.

- Profiler
 - [line_profiler](https://github.com/rkern/line_profiler) [https://github.com/rkern/line_profiler] - Line-by-line profiling.
 - [memory_profiler](https://github.com/fabianp/memory_profiler) [https://github.com/fabianp/memory_profiler] - Monitor Memory usage of Python code.
 - [py-spy](https://github.com/benfred/py-spy) [https://github.com/benfred/py-spy] - A sampling profiler for Python programs. Written in Rust.
 - [pyflame](https://github.com/uber/pyflame) [https://github.com/uber/pyflame] - A ptracing profiler For Python.
 - [vprof](https://github.com/nvdv/vprof) [https://github.com/nvdv/vprof] - Visual Python profiler.
- Others
 - [django-debug-toolbar](https://github.com/jazzband/django-debug-toolbar) [https://github.com/jazzband/django-debug-toolbar] - Display various debug information for Django.
 - [django-devserver](https://github.com/dcramer/django-devserver) [https://github.com/dcramer/django-devserver] - A drop-in replacement for Django's runserver.
 - [flask-debugtoolbar](https://github.com/mgood/flask-debugtoolbar) [https://github.com/mgood/flask-debugtoolbar] - A port of the django-debug-toolbar to flask.
 - [icecream](https://github.com/gruns/icecream) [https://github.com/gruns/icecream] - Inspect variables, expressions, and program execution with a single, simple function call.
 - [pyelftools](https://github.com/eliben/pyelftools) [https://github.com/eliben/pyelftools] - Parsing and analyzing ELF files and DWARF debugging information.

Deep Learning

Frameworks for Neural Networks and Deep Learning. Also see [awesome-deep-learning](https://github.com/ChristosChristofidis/awesome-deep-learning) [https://github.com/ChristosChristofidis/awesome-deep-learning].

- [caffe](https://github.com/BVLC/caffe) [https://github.com/BVLC/caffe] - A fast open framework for deep learning..
- [keras](https://github.com/keras-team/keras) [https://github.com/keras-team/keras] - A high-level neural networks library and capable of running on top of either TensorFlow or Theano.

- **mxnet** [<https://github.com/dmlc/mxnet>] - A deep learning framework designed for both efficiency and flexibility.
- **pytorch** [<https://github.com/pytorch/pytorch>] - Tensors and Dynamic neural networks in Python with strong GPU acceleration.
- **SerpentAI** [<https://github.com/SerpentAI/SerpentAI>] - Game agent framework. Use any video game as a deep learning sandbox.
- **tensorflow** [<https://github.com/tensorflow/tensorflow>] - The most popular Deep Learning framework created by Google.
- **Theano** [<https://github.com/Theano/Theano>] - A library for fast numerical computation.

DevOps Tools

Software and libraries for DevOps.

- Configuration Management
 - **ansible** [<https://github.com/ansible/ansible>] - A radically simple IT automation platform.
 - **cloudinit** [<https://cloudinit.readthedocs.io/en/latest/>] - A multi-distribution package that handles early initialization of a cloud instance.
 - **OpenStack** [<https://www.openstack.org/>] - Open source software for building private and public clouds.
 - **pyinfra** [<https://github.com/Fizzadar/pyinfra>] - A versatile CLI tools and python libraries to automate infrastructure.
 - **saltstack** [<https://github.com/saltstack/salt>] - Infrastructure automation and management system.
- SSH-style Deployment
 - **cuisine** [<https://github.com/sebastien/cuisine>] - Chef-like functionality for Fabric.

- **fabric** [<https://github.com/fabric/fabric>] - A simple, Pythonic tool for remote execution and deployment.
- **fabtools** [<https://github.com/fabtools/fabtools>] - Tools for writing awesome Fabric files.
- Process Management
 - **honcho** [<https://github.com/nickstenning/honcho>] - A Python clone of **Foreman** [<https://github.com/ddollar/foreman>], for managing Procfile-based applications.
 - **supervisor** [<https://github.com/Supervisor/supervisor>] - Supervisor process control system for UNIX.
- Monitoring
 - **psutil** [<https://github.com/giampaolo/psutil>] - A cross-platform process and system utilities module.
- Backup
 - **BorgBackup** [<https://www.borgbackup.org/>] - A deduplicating archiver with compression and encryption.
- Others
 - **docker-compose** [<https://docs.docker.com/compose/>] - Fast, isolated development environments using **Docker** [<https://www.docker.com/>].

Distributed Computing

Frameworks and libraries for Distributed Computing.

- Batch Processing
 - **dask** [<https://github.com/dask/dask>] - A flexible parallel computing library for analytic computing.
 - **luigi** [<https://github.com/spotify/luigi>] - A module that helps you build complex pipelines of batch jobs.

- **mrjob** [<https://github.com/Yelp/mrjob>] - Run MapReduce jobs on Hadoop or Amazon Web Services.
- **PySpark** [<https://pypi.org/project/pyspark/>] - **Apache Spark** [<https://spark.apache.org/>] Python API.
- **Ray** [<https://github.com/ray-project/ray/>] - A system for parallel and distributed Python that unifies the machine learning ecosystem.
- Stream Processing
 - **faust** [<https://github.com/robinhood/faust>] - A stream processing library, porting the ideas from **Kafka Streams** [<https://kafka.apache.org/documentation/streams/>] to Python.
 - **streamparse** [<https://github.com/Parsely/streamparse>] - Run Python code against real-time streams of data via **Apache Storm** [<https://storm.apache.org/>].

Distribution

Libraries to create packaged executables for release distribution.

- **dh-virtualenv** [<https://github.com/spotify/dh-virtualenv>] - Build and distribute a virtualenv as a Debian package.
- **Nuitka** [<https://nuitka.net/>] - Compile scripts, modules, packages to an executable or extension module.
- **py2app** [<https://pythonhosted.org/py2app/>] - Freezes Python scripts (Mac OS X).
- **py2exe** [<http://www.py2exe.org/>] - Freezes Python scripts (Windows).
- **pyarmor** [<https://github.com/dashingsoft/pyarmor>] - A tool used to obfuscate python scripts, bind obfuscated scripts to fixed machine or expire obfuscated scripts.
- **PyInstaller** [<https://github.com/pyinstaller/pyinstaller>] - Converts Python programs into stand-alone executables (cross-platform).

- [pynsist](https://pynsist.readthedocs.io/en/latest/) [https://pynsist.readthedocs.io/en/latest/] - A tool to build Windows installers, installers bundle Python itself.
- [shiv](https://github.com/linkedin/shiv) [https://github.com/linkedin/shiv] - A command line utility for building fully self-contained zipapps (PEP 441), but with all their dependencies included.

Documentation

Libraries for generating project documentation.

- [sphinx](https://github.com/sphinx-doc/sphinx/) [https://github.com/sphinx-doc/sphinx/] - Python Documentation generator.
 - [awesome-sphinxdoc](https://github.com/yoloseem/awesome-sphinxdoc) [https://github.com/yoloseem/awesome-sphinxdoc]
- [pdoc](https://github.com/mitmproxy/pdoc) [https://github.com/mitmproxy/pdoc] - Epydoc replacement to auto generate API documentation for Python libraries.
- [pycco](https://github.com/pycco-docs/pycco) [https://github.com/pycco-docs/pycco] - The literate-programming-style documentation generator.

Downloader

Libraries for downloading.

- [akshare](https://github.com/jindaxiang/akshare) [https://github.com/jindaxiang/akshare] - A financial data interface library, built for human beings!
- [s3cmd](https://github.com/s3tools/s3cmd) [https://github.com/s3tools/s3cmd] - A command line tool for managing Amazon S3 and CloudFront.
- [s4cmd](https://github.com/bloomreach/s4cmd) [https://github.com/bloomreach/s4cmd] - Super S3 command line tool, good for higher performance.
- [you-get](https://you-get.org/) [https://you-get.org/] - A YouTube/Youku/Niconico video downloader written in Python 3.
- [youtube-dl](https://rg3.github.io/youtube-dl/) [https://rg3.github.io/youtube-dl/] - A small command-line program to download videos from YouTube.

E-commerce

Frameworks and libraries for e-commerce and payments.

- **alipay** [<https://github.com/lxneng/alipay>] - Unofficial Alipay API for Python.
- **Cartridge** [<https://github.com/stephenmcd/cartridge>] - A shopping cart app built using the Mezzanine.
- **django-oscar** [<http://oscarcommerce.com/>] - An open-source e-commerce framework for Django.
- **django-shop** [<https://github.com/awesto/django-shop>] - A Django based shop system.
- **forex-python** [<https://github.com/MicroPyramid/forex-python>] - Foreign exchange rates, Bitcoin price index and currency conversion.
- **merchant** [<https://github.com/agiliq/merchant>] - A Django app to accept payments from various payment processors.
- **money** [<https://github.com/carlospalol/money>] - `Money` class with optional CLDR-backed locale-aware formatting and an extensible currency exchange.
- **python-currencies** [<https://github.com/Alir3z4/python-currencies>] - Display money format and its filthy currencies.
- **saleor** [<http://getsaleor.com/>] - An e-commerce storefront for Django.
- **shoop** [<https://www.shuup.com/en/>] - An open source E-Commerce platform based on Django.

Editor Plugins and IDEs

- Emacs
 - **elpy** [<https://github.com/jorgenschaefer/elpy>] - Emacs Python Development Environment.
- Sublime Text

- **anaconda** [<https://github.com/DamnWidget/anaconda>] - Anaconda turns your Sublime Text 3 in a full featured Python development IDE.
- **SublimeJEDI** [<https://github.com/srusskih/SublimeJEDI>] - A Sublime Text plugin to the awesome auto-complete library Jedi.
- Vim
 - **jedi-vim** [<https://github.com/davidhalter/jedi-vim>] - Vim bindings for the Jedi auto-completion library for Python.
 - **python-mode** [<https://github.com/python-mode/python-mode>] - An all in one plugin for turning Vim into a Python IDE.
 - **YouCompleteMe** [<https://github.com/Valloric/YouCompleteMe>] - Includes **Jedi** [<https://github.com/davidhalter/jedi>]-based completion engine for Python.
- Visual Studio
 - **PTVS** [<https://github.com/Microsoft/PTVS>] - Python Tools for Visual Studio.
- Visual Studio Code
 - **Python** [<https://marketplace.visualstudio.com/items?itemName=ms-python.python>] - The official VSCode extension with rich support for Python.
- IDE
 - **PyCharm** [<https://www.jetbrains.com/pycharm/>] - Commercial Python IDE by JetBrains. Has free community edition available.
 - **spyder** [<https://github.com/spyder-ide/spyder>] - Open Source Python IDE.

Email

Libraries for sending and parsing email.

- Mail Servers

- **modoboa** [<https://github.com/modoboa/modoboa>] - A mail hosting and management platform including a modern Web UI.
- **salmon** [<https://github.com/moggers87/salmon>] - A Python Mail Server.
- Clients
 - **imbox** [<https://github.com/martinrusev/imbox>] - Python IMAP for Humans.
 - **yagmail** [<https://github.com/kootenpv/yagmail>] - Yet another Gmail/SMTP client.
- Others
 - **flanker** [<https://github.com/mailgun/flanker>] - An email address and Mime parsing library.
 - **mailer** [<https://github.com/marrow/mailer>] - High-performance extensible mail delivery framework.

Enterprise Application Integrations

Platforms and tools for systems integrations in enterprise environments

- **Zato** [<https://zato.io>] - ESB, SOA, REST, APIs and Cloud Integrations in Python.

Environment Management

Libraries for Python version and virtual environment management.

- **pyenv** [<https://github.com/pyenv/pyenv>] - Simple Python version management.
- **virtualenv** [<https://github.com/pypa/virtualenv>] - A tool to create isolated Python environments.

Files

Libraries for file manipulation and MIME type detection.

- **mimetypes** [<https://docs.python.org/3/library/mimetypes.html>] - (Python standard library) Map filenames to MIME types.
- **path.py** [<https://github.com/jaraco/path.py>] - A module wrapper for **os.path** [<https://docs.python.org/3/library/os.path.html>].
- **pathlib** [<https://docs.python.org/3/library/pathlib.html>] - (Python standard library) An cross-platform, object-oriented path library.
- **PyFilesystem2** [<https://github.com/pyfilesystem/pyfilesystem2>] - Python's filesystem abstraction layer.
- **python-magic** [<https://github.com/ahupp/python-magic>] - A Python interface to the libmagic file type identification library.
- **Unipath** [<https://github.com/mikeorr/Unipath>] - An object-oriented approach to file/directory operations.
- **watchdog** [<https://github.com/gorakhargosh/watchdog>] - API and shell utilities to monitor file system events.

Foreign Function Interface

Libraries for providing foreign function interface.

- **cffi** [<https://pypi.org/project/cffi/>] - Foreign Function Interface for Python calling C code.
- **ctypes** [<https://docs.python.org/3/library/ctypes.html>] - (Python standard library) Foreign Function Interface for Python calling C code.
- **PyCUDA** [<https://mathematician.de/software/pycuda/>] - A Python wrapper for Nvidia's CUDA API.
- **SWIG** [<http://www.swig.org/Doc1.3/Python.html>] - Simplified Wrapper and Interface Generator.

Forms

Libraries for working with forms.

- **Deform** [<https://github.com/Pylons/deform>] - Python HTML form generation library influenced by the formish form generation library.
- **django-bootstrap3** [<https://github.com/dyve/django-bootstrap3>] - Bootstrap 3 integration with Django.
- **django-bootstrap4** [<https://github.com/zostera/django-bootstrap4>] - Bootstrap 4 integration with Django.
- **django-crispy-forms** [<https://github.com/django-crispy-forms/django-crispy-forms>] - A Django app which lets you create beautiful forms in a very elegant and DRY way.
- **django-remote-forms** [<https://github.com/WiserTogether/django-remote-forms>] - A platform independent Django form serializer.
- **WTForms** [<https://github.com/wtforms/wtforms>] - A flexible forms validation and rendering library.

Functional Programming

Functional Programming with Python.

- **Coconut** [<https://github.com/evhub/coconut>] - A variant of Python built for simple, elegant, Pythonic functional programming.
- **CyToolz** [<https://github.com/pytoolz/cytoolz/>] - Cython implementation of `Toolz` : High performance functional utilities.
- **fn.py** [<https://github.com/kachayev/fn.py>] - Functional programming in Python: implementation of missing features to enjoy FP.
- **fancy** [<https://github.com/Suor/fancy>] - A fancy and practical functional tools.
- **more-itertools** [<https://github.com/erikrose/more-itertools>] - More routines for operating on iterables, beyond `itertools` .

- **returns** [<https://github.com/dry-python/returns>] - A set of type-safe monads, transformers, and composition utilities.
- **Toolz** [<https://github.com/pytoolz/toolz>] - A collection of functional utilities for iterators, functions, and dictionaries.

GUI Development

Libraries for working with graphical user interface applications.

- **curses** [<https://docs.python.org/3/library/curses.html>] - Built-in wrapper for **ncurses** [<https://www.gnu.org/software/ncurses/>] used to create terminal GUI applications.
- **DearPyGui** [<https://github.com/RaylockLLC/DearPyGui/>] - A Simple GPU accelerated Python GUI framework
- **Eel** [<https://github.com/ChrisKnott/Eel>] - A library for making simple Electron-like offline HTML/JS GUI apps.
- **enaml** [<https://github.com/nucleic/enaml>] - Creating beautiful user-interfaces with Declarative Syntax like QML.
- **Flexx** [<https://github.com/zoofIO/flexx>] - Flexx is a pure Python toolkit for creating GUI's, that uses web technology for its rendering.
- **Goocy** [<https://github.com/chriskiehl/Goocy>] - Turn command line programs into a full GUI application with one line.
- **kivy** [<https://kivy.org/>] - A library for creating NUI applications, running on Windows, Linux, Mac OS X, Android and iOS.
- **pyglet** [<https://github.com/pyglet/pyglet>] - A cross-platform windowing and multimedia library for Python.
- **PyGObject** [<https://wiki.gnome.org/Projects/PyGObject>] - Python Bindings for GLib/GObject/GIO/GTK+ (GTK+3).
- **PyQt** [<https://riverbankcomputing.com/software/pyqt/intro>] - Python bindings for the **Qt** [<https://www.qt.io/>] cross-platform application and UI framework.

- **PySimpleGUI** [<https://github.com/PySimpleGUI/PySimpleGUI>] - Wrapper for tkinter, Qt, WxPython and Remi.
- **pywebview** [<https://github.com/r0x0r/pywebview/>] - A lightweight cross-platform native wrapper around a webview component.
- **Tkinter** [<https://wiki.python.org/moin/TkInter>] - Tkinter is Python's de-facto standard GUI package.
- **Toga** [<https://github.com/pybee/toga>] - A Python native, OS native GUI toolkit.
- **urwid** [<http://urwid.org/>] - A library for creating terminal GUI applications with strong support for widgets, events, rich colors, etc.
- **wxPython** [<https://wxpython.org/>] - A blending of the wxWidgets C++ class library with the Python.

GraphQL

Libraries for working with GraphQL.

- **graphene** [<https://github.com/graphql-python/graphene/>] - GraphQL framework for Python.
- **tartiflette-aiohttp** [<https://github.com/tartiflette/tartiflette-aiohttp/>] - An `aiohttp`-based wrapper for Tartiflette to expose GraphQL APIs over HTTP.
- **tartiflette-asgi** [<https://github.com/tartiflette/tartiflette-asgi/>] - ASGI support for the Tartiflette GraphQL engine.
- **tartiflette** [<https://tartiflette.io>] - SDL-first GraphQL engine implementation for Python 3.6+ and asyncio.

Game Development

Awesome game development libraries.

- **Arcade** [<https://arcade.academy/index.html>] - Arcade is a modern Python framework for crafting games with compelling graphics and sound.

- **Cocos2d** [<http://cocos2d.org/>] - cocos2d is a framework for building 2D games, demos, and other graphical/interactive applications.
- **Harfang3D** [<http://www.harfang3d.com>] - Python framework for 3D, VR and game development.
- **Panda3D** [<https://www.panda3d.org/>] - 3D game engine developed by Disney.
- **Pygame** [<http://www.pygame.org/news.html>] - Pygame is a set of Python modules designed for writing games.
- **PyOgre** [<http://www.ogre3d.org/tikiwiki/PyOgre>] - Python bindings for the Ogre 3D render engine, can be used for games, simulations, anything 3D.
- **PyOpenGL** [<http://pyopengl.sourceforge.net/>] - Python ctypes bindings for OpenGL and it's related APIs.
- **PySDL2** [<https://pysdl2.readthedocs.io>] - A ctypes based wrapper for the SDL2 library.
- **RenPy** [<https://www.renpy.org/>] - A Visual Novel engine.

Geolocation

Libraries for geocoding addresses and working with latitudes and longitudes.

- **django-countries** [<https://github.com/SmileyChris/django-countries>] - A Django app that provides a country field for models and forms.
- **GeoDjango** [<https://docs.djangoproject.com/en/dev/ref/contrib/gis/>] - A world-class geographic web framework.
- **GeoIP** [<https://github.com/maxmind/geoip-api-python>] - Python API for MaxMind GeoIP Legacy Database.
- **geojson** [<https://github.com/frewsxcv/python-geojson>] - Python bindings and utilities for GeoJSON.
- **geopy** [<https://github.com/geopy/geopy>] - Python Geocoding Toolbox.

HTML Manipulation

Libraries for working with HTML and XML.

- **BeautifulSoup** [<https://www.crummy.com/software/BeautifulSoup/bs4/doc/>] - Providing Pythonic idioms for iterating, searching, and modifying HTML or XML.
- **bleach** [<https://github.com/mozilla/bleach>] - A whitelist-based HTML sanitization and text linkification library.
- **cssutils** [<https://pypi.org/project/cssutils/>] - A CSS library for Python.
- **html5lib** [<https://github.com/html5lib/html5lib-python>] - A standards-compliant library for parsing and serializing HTML documents and fragments.
- **lxml** [<http://lxml.de/>] - A very fast, easy-to-use and versatile library for handling HTML and XML.
- **MarkupSafe** [<https://github.com/pallets/markupsafe>] - Implements a XML/HTML/XHTML Markup safe string for Python.
- **pyquery** [<https://github.com/gawel/pyquery>] - A jQuery-like library for parsing HTML.
- **untangle** [<https://github.com/stchris/untangle>] - Converts XML documents to Python objects for easy access.
- **WeasyPrint** [<http://weasyprint.org>] - A visual rendering engine for HTML and CSS that can export to PDF.
- **xmldataset** [<https://xmldataset.readthedocs.io/en/latest/>] - Simple XML Parsing.
- **xmldict** [<https://github.com/martinblech/xmldict>] - Working with XML feel like you are working with JSON.

HTTP Clients

Libraries for working with HTTP.

- **grequests** [<https://github.com/spyoungtech/grequests>] - requests + gevent for asynchronous HTTP requests.
- **httplib2** [<https://github.com/httplib2/httplib2>] - Comprehensive HTTP client library.
- **httpx** [<https://github.com/encode/httpx>] - A next generation HTTP client for Python.
- **requests** [<https://github.com/psf/requests>] - HTTP Requests for Humans.
- **treq** [<https://github.com/twisted/treq>] - Python requests like API built on top of Twisted's HTTP client.
- **urllib3** [<https://github.com/shazow/urllib3>] - A HTTP library with thread-safe connection pooling, file post support, sanity friendly.

Hardware

Libraries for programming with hardware.

- **ino** [<http://inotool.org/>] - Command line toolkit for working with **Arduino** [<https://www.arduino.cc/>].
- **keyboard** [<https://github.com/boppreh/keyboard>] - Hook and simulate global keyboard events on Windows and Linux.
- **mouse** [<https://github.com/boppreh/mouse>] - Hook and simulate global mouse events on Windows and Linux.
- **Pingo** [<http://www.pingo.io/>] - Pingo provides a uniform API to program devices like the Raspberry Pi, pcDuino, Intel Galileo, etc.
- **PyUserInput** [<https://github.com/SavinaRoja/PyUserInput>] - A module for cross-platform control of the mouse and keyboard.
- **scapy** [<https://github.com/secdev/scapy>] - A brilliant packet manipulation library.
- **wifi** [<https://github.com/rockymeza/wifi>] - A Python library and command line tool for working with WiFi on Linux.

Image Processing

Libraries for manipulating images.

- **hmap** [<https://github.com/rossgoodwin/hmap>] - Image histogram remapping.
- **imgSeek** [<https://sourceforge.net/projects/imgseek/>] - A project for searching a collection of images using visual similarity.
- **nude.py** [<https://github.com/hhatto/nude.py>] - Nudity detection.
- **pagan** [<https://github.com/daboth/pagan>] - Retro identicon (Avatar) generation based on input string and hash.
- **pillow** [<https://github.com/python-pillow/Pillow>] - Pillow is the friendly **PIL** [<http://www.pythonware.com/products/pil/>] fork.
- **pygram** [<https://github.com/ajkumar25/pygram>] - Instagram-like image filters.
- **PyMatting** [<https://github.com/pymatting/pymatting>] - A library for alpha matting.
- **python-barcode** [<https://github.com/WhyNotHugo/python-barcode>] - Create barcodes in Python with no extra dependencies.
- **python-qrcode** [<https://github.com/lincolnloop/python-qrcode>] - A pure Python QR Code generator.
- **pyvips** [<https://github.com/libvips/pyvips>] - A fast image processing library with low memory needs.
- **pywal** [<https://github.com/dylananaraps/pywal>] - A tool that generates color schemes from images.
- **Quads** [<https://github.com/fogleman/Quads>] - Computer art based on quadtrees.
- **scikit-image** [<http://scikit-image.org/>] - A Python library for (scientific) image processing.
- **thumbor** [<https://github.com/thumbor/thumbor>] - A smart imaging service. It enables on-demand crop, re-sizing and flipping of images.

- **wand** [<https://github.com/dahlia/wand>] - Python bindings for **MagickWand** [<https://www.imagemagick.org/script/magick-wand.php>], C API for ImageMagick.

Implementations

Implementations of Python.

- **CLPython** [<https://github.com/metawilm/cl-python>] - Implementation of the Python programming language written in Common Lisp.
- **CPython** [<https://github.com/python/cpython>] - **Default, most widely used implementation of the Python programming language written in C.**
- **Cython** [<http://cython.org/>] - Optimizing Static Compiler for Python.
- **Grumpy** [<https://github.com/google/grumpy>] - More compiler than interpreter as more powerful CPython2.7 replacement (alpha).
- **IronPython** [<https://github.com/IronLanguages/ironpython3>] - Implementation of the Python programming language written in C#.
- **Jython** [<https://hg.python.org/jython>] - Implementation of Python programming language written in Java for the JVM.
- **MicroPython** [<https://github.com/micropython/micropython>] - A lean and efficient Python programming language implementation.
- **Numba** [<https://numba.pydata.org/>] - Python JIT compiler to LLVM aimed at scientific Python.
- **PeachPy** [<https://github.com/Maratyszcza/PeachPy>] - x86-64 assembler embedded in Python.
- **Pyjion** [<https://github.com/Microsoft/Pyjion>] - A JIT for Python based upon CoreCLR.
- **PyPy** [<https://foss.heptapod.net/pypy/pypy>] - A very fast and compliant implementation of the Python language.

- **Pyston** [<https://github.com/dropbox/pyston>] - A Python implementation using JIT techniques.
- **Stackless Python** [<https://github.com/stackless-dev/stackless>] - An enhanced version of the Python programming language.

Interactive Interpreter

Interactive Python interpreters (REPL).

- **bpython** [<https://github.com/bpython/bpython>] - A fancy interface to the Python interpreter.
- **Jupyter Notebook (IPython)** [<https://jupyter.org>] - A rich toolkit to help you make the most out of using Python interactively.
 - **awesome-jupyter** [<https://github.com/markusschanta/awesome-jupyter>]
- **ptpython** [<https://github.com/jonathanslenders/ptpython>] - Advanced Python REPL built on top of the **python-prompt-toolkit** [<https://github.com/jonathanslenders/python-prompt-toolkit>].

Internationalization

Libraries for working with i18n.

- **Babel** [<http://babel.pocoo.org/en/latest/>] - An internationalization library for Python.
- **PyICU** [<https://github.com/ovalhub/pyicu>] - A wrapper of International Components for Unicode C++ library (**ICU** [<http://site.icu-project.org/>]).

Job Scheduler

Libraries for scheduling jobs.

- **Airflow** [<https://airflow.apache.org/>] - Airflow is a platform to programmatically author, schedule and monitor workflows.
- **APScheduler** [<https://apscheduler.readthedocs.io/en/latest/>] - A light but powerful in-process task scheduler that lets you schedule functions.
- **django-schedule** [<https://github.com/thauber/django-schedule>] - A calendaring app for Django.
- **doit** [<http://pydoit.org/>] - A task runner and build tool.
- **gunnery** [<https://github.com/gunnery/gunnery>] - Multipurpose task execution tool for distributed systems with web-based interface.
- **Joblib** [<https://joblib.readthedocs.io/>] - A set of tools to provide lightweight pipelining in Python.
- **Plan** [<https://github.com/fengsp/plan>] - Writing crontab file in Python like a charm.
- **Prefect** [<https://github.com/PrefectHQ/prefect>] - A modern workflow orchestration framework that makes it easy to build, schedule and monitor robust data pipelines.
- **schedule** [<https://github.com/dbader/schedule>] - Python job scheduling for humans.
- **Spiff** [<https://github.com/knipknap/SpiffWorkflow>] - A powerful workflow engine implemented in pure Python.
- **TaskFlow** [<https://docs.openstack.org/developer/taskflow/>] - A Python library that helps to make task execution easy, consistent and reliable.

Logging

Libraries for generating and working with logs.

- **logbook** [<https://logbook.readthedocs.io/en/stable/>] - Logging replacement for Python.

- **logging** [<https://docs.python.org/3/library/logging.html>] - (Python standard library) Logging facility for Python.
- **loguru** [<https://github.com/Delgan/loguru>] - Library which aims to bring enjoyable logging in Python.
- **sentry-python** [<https://github.com/getsentry/sentry-python>] - Sentry SDK for Python.
- **structlog** [<https://www.structlog.org/en/stable/>] - Structured logging made easy.

Machine Learning

Libraries for Machine Learning. Also see [awesome-machine-learning](https://github.com/josephmisiti/awesome-machine-learning#python) [<https://github.com/josephmisiti/awesome-machine-learning#python>].

- **gym** [<https://github.com/openai/gym>] - A toolkit for developing and comparing reinforcement learning algorithms.
- **H2O** [<https://github.com/h2oai/h2o-3>] - Open Source Fast Scalable Machine Learning Platform.
- **Metrics** [<https://github.com/benhamner/Metrics>] - Machine learning evaluation metrics.
- **MindsDB** [<https://github.com/mindsdb/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.
- **NuPIC** [<https://github.com/numenta/nupic>] - Numenta Platform for Intelligent Computing.
- **scikit-learn** [<http://scikit-learn.org/>] - The most popular Python library for Machine Learning.
- **Spark ML** [<https://spark.apache.org/docs/latest/ml-guide.html>] - **Apache Spark** [<https://spark.apache.org/>]'s scalable Machine Learning library.
- **vowpal_porpoise** [https://github.com/josephreisinger/vowpal_porpoise] - A lightweight Python wrapper for **Vowpal Wabbit**

[https://github.com/JohnLangford/vowpal_wabbit/].

- **xgboost** [<https://github.com/dmlc/xgboost>] - A scalable, portable, and distributed gradient boosting library.

Microsoft Windows

Python programming on Microsoft Windows.

- **Python(x,y)** [<https://python-xy.github.io/>] - Scientific-applications-oriented Python Distribution based on Qt and Spyder.
- **pythonlibs** [<http://www.lfd.uci.edu/~gohlke/pythonlibs/>] - Unofficial Windows binaries for Python extension packages.
- **PythonNet** [<https://github.com/pythonnet/pythonnet>] - Python Integration with the .NET Common Language Runtime (CLR).
- **PyWin32** [<https://github.com/mhammond/pywin32>] - Python Extensions for Windows.
- **WinPython** [<https://winpython.github.io/>] - Portable development environment for Windows 7/8.

Miscellaneous

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

- **blinker** [<https://github.com/jek/blinker>] - A fast Python in-process signal/event dispatching system.
- **boltons** [<https://github.com/mahmoud/boltons>] - A set of pure-Python utilities.
- **itsdangerous** [<https://github.com/pallets/itsdangerous>] - Various helpers to pass trusted data to untrusted environments.
- **magenta** [<https://github.com/magenta/magenta>] - A tool to generate music and art using artificial intelligence.

- **pluginbase** [<https://github.com/mitsuhiko/pluginbase>] - A simple but flexible plugin system for Python.
- **tryton** [<https://www.tryton.org/>] - A general purpose business framework.

Natural Language Processing

Libraries for working with human languages.

- General
 - **gensim** [<https://github.com/RaRe-Technologies/gensim>] - Topic Modeling for Humans.
 - **langid.py** [<https://github.com/saffsd/langid.py>] - Stand-alone language identification system.
 - **nltk** [<http://www.nltk.org/>] - A leading platform for building Python programs to work with human language data.
 - **pattern** [<https://github.com/clips/pattern>] - A web mining module.
 - **polyglot** [<https://github.com/aboSamoor/polyglot>] - Natural language pipeline supporting hundreds of languages.
 - **pytext** [<https://github.com/facebookresearch/pytext>] - A natural language modeling framework based on PyTorch.
 - **PyTorch-NLP** [<https://github.com/PetrochukM/PyTorch-NLP>] - A toolkit enabling rapid deep learning NLP prototyping for research.
 - **spacy** [<https://spacy.io/>] - A library for industrial-strength natural language processing in Python and Cython.
 - **Stanza** [<https://github.com/stanfordnlp/stanza>] - The Stanford NLP Group's official Python library, supporting 60+ languages.
- Chinese
 - **funNLP** [<https://github.com/fighting41love/funNLP>] - A collection of tools and datasets for Chinese NLP.

- [jieba](https://github.com/fxsjy/jieba) [https://github.com/fxsjy/jieba] - The most popular Chinese text segmentation library.
- [pkuseg-python](https://github.com/lancopku/pkuseg-python) [https://github.com/lancopku/pkuseg-python] - A toolkit for Chinese word segmentation in various domains.
- [snownlp](https://github.com/isnowfy/snownlp) [https://github.com/isnowfy/snownlp] - A library for processing Chinese text.

Network Virtualization

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

- [mininet](https://github.com/mininet/mininet) [https://github.com/mininet/mininet] - A popular network emulator and API written in Python.
- [napalm](https://github.com/napalm-automation/napalm) [https://github.com/napalm-automation/napalm] - Cross-vendor API to manipulate network devices.
- [pox](https://github.com/noxrepo/pox) [https://github.com/noxrepo/pox] - A Python-based SDN control applications, such as OpenFlow SDN controllers.

News Feed

Libraries for building user's activities.

- [django-activity-stream](https://github.com/justquick/django-activity-stream) [https://github.com/justquick/django-activity-stream] - Generating generic activity streams from the actions on your site.
- [Stream Framework](https://github.com/tschellenbach/Stream-Framework) [https://github.com/tschellenbach/Stream-Framework] - Building news feed and notification systems using Cassandra and Redis.

ORM

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

- Relational Databases
 - **Django Models** [<https://docs.djangoproject.com/en/dev/topics/db/models/>] - The Django ORM.
 - **SQLAlchemy** [<https://www.sqlalchemy.org/>] - The Python SQL Toolkit and Object Relational Mapper.
 - **awesome-sqlalchemy** [<https://github.com/dahlia/awesome-sqlalchemy>]
 - **dataset** [<https://github.com/pudo/dataset>] - Store Python dicts in a database - works with SQLite, MySQL, and PostgreSQL.
 - **orator** [<https://github.com/sdispater/orator>] - The Orator ORM provides a simple yet beautiful ActiveRecord implementation.
 - **orm** [<https://github.com/encode/orm>] - An async ORM.
 - **peewee** [<https://github.com/coleifer/peewee>] - A small, expressive ORM.
 - **pony** [<https://github.com/ponyorm/pony/>] - ORM that provides a generator-oriented interface to SQL.
 - **pydal** [<https://github.com/web2py/pydal/>] - A pure Python Database Abstraction Layer.
- NoSQL Databases
 - **hot-redis** [<https://github.com/stephenmcd/hot-redis>] - Rich Python data types for Redis.
 - **mongoengine** [<https://github.com/MongoEngine/mongoengine>] - A Python Object-Document-Mapper for working with MongoDB.
 - **PynamoDB** [<https://github.com/pynamodb/PynamoDB>] - A Pythonic interface for **Amazon DynamoDB** [<https://aws.amazon.com/dynamodb/>].
 - **redisco** [<https://github.com/kiddouk/redisco>] - A Python Library for Simple Models and Containers Persisted in Redis.

Package Management

Libraries for package and dependency management.

- **pip** [<https://pip.pypa.io/en/stable/>] - The package installer for Python.
 - **pip-tools** [<https://github.com/jazzband/pip-tools>] - A set of tools to keep your pinned Python dependencies fresh.
 - **PyPI** [<https://pypi.org/>]
- **conda** [<https://github.com/conda/conda/>] - Cross-platform, Python-agnostic binary package manager.
- **poetry** [<https://github.com/sdispater/poetry>] - Python dependency management and packaging made easy.

Package Repositories

Local PyPI repository server and proxies.

- **bandersnatch** [<https://github.com/pypa/bandersnatch/>] - PyPI mirroring tool provided by Python Packaging Authority (PyPA).
- **devpi** [<https://github.com/devpi/devpi>] - PyPI server and packaging/testing/release tool.
- **localshop** [<https://github.com/jazzband/localshop>] - Local PyPI server (custom packages and auto-mirroring of pypi).
- **warehouse** [<https://github.com/pypa/warehouse>] - Next generation Python Package Repository (PyPI).

Penetration Testing

Frameworks and tools for penetration testing.

- **fsociety** [<https://github.com/Manisso/fsociety>] - A Penetration testing framework.
- **setoolkit** [<https://github.com/trustedsec/social-engineer-toolkit>] - A toolkit for social engineering.
- **sqlmap** [<https://github.com/sqlmapproject/sqlmap>] - Automatic SQL injection and database takeover tool.

Permissions

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

- **django-guardian** [<https://github.com/django-guardian/django-guardian>] - Implementation of per object permissions for Django 1.2+
- **django-rules** [<https://github.com/dfunckt/django-rules>] - A tiny but powerful app providing object-level permissions to Django, without requiring a database.

Processes

Libraries for starting and communicating with OS processes.

- **delegator.py** [<https://github.com/amitt001/delegator.py>] - **Subprocesses** [<https://docs.python.org/3/library/subprocess.html>] for Humans 2.0.
- **sarge** [<https://sarge.readthedocs.io/en/latest/>] - Yet another wrapper for subprocess.
- **sh** [<https://github.com/amoffat/sh>] - A full-fledged subprocess replacement for Python.

Recommender Systems

Libraries for building recommender systems.

- **annoy** [<https://github.com/spotify/annoy>] - Approximate Nearest Neighbors in C++/Python optimized for memory usage.
- **fastFM** [<https://github.com/ibayer/fastFM>] - A library for Factorization Machines.
- **implicit** [<https://github.com/benfred/implicit>] - A fast Python implementation of collaborative filtering for implicit datasets.
- **libffm** [<https://github.com/guestwalk/libffm>] - A library for Field-aware Factorization Machine (FFM).
- **lightfm** [<https://github.com/lyst/lightfm>] - A Python implementation of a number of popular recommendation algorithms.
- **spotlight** [<https://github.com/maciejkula/spotlight>] - Deep recommender models using PyTorch.
- **Surprise** [<https://github.com/NicolasHug/Surprise>] - A scikit for building and analyzing recommender systems.
- **tensorrec** [<https://github.com/jfkirk/tensorrec>] - A Recommendation Engine Framework in TensorFlow.

Refactoring

Refactoring tools and libraries for Python

- **Bicycle Repair Man** [<http://bicyclerepair.sourceforge.net/>] - Bicycle Repair Man, a refactoring tool for Python.
- **Bowler** [<https://pybowler.io/>] - Safe code refactoring for modern Python.
- **Rope** [<https://github.com/python-rope/rope>] - Rope is a python refactoring library.

RESTful API

Libraries for building RESTful APIs.

- Django
 - [django-rest-framework](http://www.django-rest-framework.org/) [http://www.django-rest-framework.org/] - A powerful and flexible toolkit to build web APIs.
 - [django-tastypie](http://tastypieapi.org/) [http://tastypieapi.org/] - Creating delicious APIs for Django apps.
- Flask
 - [eve](https://github.com/pyeve/eve) [https://github.com/pyeve/eve] - REST API framework powered by Flask, MongoDB and good intentions.
 - [flask-api](https://github.com/flask-api/flask-api) [https://github.com/flask-api/flask-api] - Browsable Web APIs for Flask.
 - [flask-restful](https://github.com/flask-restful/flask-restful) [https://github.com/flask-restful/flask-restful] - Quickly building REST APIs for Flask.
- Pyramid
 - [cornice](https://github.com/Cornices/cornice) [https://github.com/Cornices/cornice] - A RESTful framework for Pyramid.
- Framework agnostic
 - [apistar](https://github.com/encode/apistar) [https://github.com/encode/apistar] - A smart Web API framework, designed for Python 3.
 - [falcon](https://github.com/falconry/falcon) [https://github.com/falconry/falcon] - A high-performance framework for building cloud APIs and web app backends.
 - [fastapi](https://github.com/tiangolo/fastapi) [https://github.com/tiangolo/fastapi] - A modern, fast, web framework for building APIs with Python 3.6+ based on standard Python type hints.
 - [hug](https://github.com/hugapi/hug) [https://github.com/hugapi/hug] - A Python 3 framework for cleanly exposing APIs.
 - [sandman2](https://github.com/jeffknupp/sandman2) [https://github.com/jeffknupp/sandman2] - Automated REST APIs for existing database-driven systems.
 - [sanic](https://github.com/huge-success/sanic) [https://github.com/huge-success/sanic] - A Python 3.6+ web server and web framework that's written to go fast.

- **vibora** [<https://vibora.io/>] - Fast, efficient and asynchronous Web framework inspired by Flask.

Robotics

Libraries for robotics.

- **PythonRobotics** [<https://github.com/AtsushiSakai/PythonRobotics>] - This is a compilation of various robotics algorithms with visualizations.
- **rospy** [<http://wiki.ros.org/rospy>] - This is a library for ROS (Robot Operating System).

RPC Servers

RPC-compatible servers.

- **RPyC** [<https://github.com/tomerfiliba/rpyc>] (Remote Python Call) - A transparent and symmetric RPC library for Python
- **zeroRPC** [<https://github.com/0rpc/zerorpc-python>] - 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** [<https://github.com/TomNicholas/Python-for-Scientists>].*

- **astropy** [<http://www.astropy.org/>] - A community Python library for Astronomy.
- **bcbio-nextgen** [<https://github.com/chapmanb/bcbio-nextgen>] - Providing best-practice pipelines for fully automated high throughput sequencing analysis.
- **bccb** [<https://github.com/chapmanb/bccb>] - Collection of useful code related to biological analysis.

- **Biopython** [http://biopython.org/wiki/Main_Page] - Biopython is a set of freely available tools for biological computation.
- **cclib** [<https://cclib.github.io/>] - A library for parsing and interpreting the results of computational chemistry packages.
- **Colour** [<http://colour-science.org/>] - Implementing a comprehensive number of colour theory transformations and algorithms.
- **Karate Club** [<https://github.com/benedekrozemberczki/karateclub>] - Unsupervised machine learning toolbox for graph structured data.
- **NetworkX** [<https://networkx.github.io/>] - A high-productivity software for complex networks.
- **NIPY** [<http://nipy.org/>] - A collection of neuroimaging toolkits.
- **NumPy** [<https://www.numpy.org/>] - A fundamental package for scientific computing with Python.
- **ObsPy** [<https://github.com/obspy/obspy/wiki/>] - A Python toolbox for seismology.
- **Open Babel** [http://openbabel.org/wiki/Main_Page] - A chemical toolbox designed to speak the many languages of chemical data.
- **PyDy** [<http://www.pydy.org/>] - Short for Python Dynamics, used to assist with workflow in the modeling of dynamic motion.
- **PyMC** [<https://github.com/pymc-devs/pymc3>] - Markov Chain Monte Carlo sampling toolkit.
- **QuTiP** [<http://qutip.org/>] - Quantum Toolbox in Python.
- **RDKit** [<http://www.rdkit.org/>] - Cheminformatics and Machine Learning Software.
- **SciPy** [<https://www.scipy.org/>] - A Python-based ecosystem of open-source software for mathematics, science, and engineering.
- **SimPy** [<https://gitlab.com/team-simpy/simpy>] - A process-based discrete-event simulation framework.

- **statsmodels** [<https://github.com/statsmodels/statsmodels>] - Statistical modeling and econometrics in Python.
- **SymPy** [<https://github.com/sympy/sympy>] - A Python library for symbolic mathematics.
- **Zipline** [<https://github.com/quantopian/zipline>] - A Pythonic algorithmic trading library.

Search

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

- **django-haystack** [<https://github.com/django-haystack/django-haystack>] - Modular search for Django.
- **elasticsearch-dsl-py** [<https://github.com/elastic/elasticsearch-dsl-py>] - The official high-level Python client for Elasticsearch.
- **elasticsearch-py** [<https://www.elastic.co/guide/en/elasticsearch/client/python-api/current/index.html>] - The official low-level Python client for **Elasticsearch** [<https://www.elastic.co/products/elasticsearch>].
- **pysolr** [<https://github.com/django-haystack/pysolr>] - A lightweight Python wrapper for **Apache Solr** [<https://lucene.apache.org/solr/>].
- **whoosh** [<https://whoosh.readthedocs.io/en/latest/>] - A fast, pure Python search engine library.

Serialization

Libraries for serializing complex data types

- **marshmallow** [<https://github.com/marshmallow-code/marshmallow>] - A lightweight library for converting complex objects to and from simple Python datatypes.

- **pysimdjson** [<https://github.com/TkTech/pysimdjson>] - A Python bindings for **simdjson** [<https://github.com/lemire/simdjson>].
- **python-rapidjson** [<https://github.com/python-rapidjson/python-rapidjson>] - A Python wrapper around **RapidJSON** [<https://github.com/Tencent/rapidjson>].
- **ultrajson** [<https://github.com/esnme/ultrajson>] - A fast JSON decoder and encoder written in C with Python bindings.

Serverless Frameworks

Frameworks for developing serverless Python code.

- **python-lambda** [<https://github.com/nficano/python-lambda>] - A toolkit for developing and deploying Python code in AWS Lambda.
- **Zappa** [<https://github.com/Miserlou/Zappa>] - A tool for deploying WSGI applications on AWS Lambda and API Gateway.

Shell

Shells based on Python.

- **xonsh** [<https://github.com/xonsh/xonsh/>] - A Python-powered, cross-platform, Unix-gazing shell language and command prompt.

Specific Formats Processing

Libraries for parsing and manipulating specific text formats.

- General
 - **tablib** [<https://github.com/jazzband/tablib>] - A module for Tabular Datasets in XLS, CSV, JSON, YAML.
- Office

- **docxtpl** [<https://github.com/elapouya/python-docx-template>] - Editing a docx document by jinja2 template
- **openpyxl** [<https://openpyxl.readthedocs.io/en/stable/>] - A library for reading and writing Excel 2010 xlsx/xlsm/xltx/xltm files.
- **pyexcel** [<https://github.com/pyexcel/pyexcel>] - Providing one API for reading, manipulating and writing csv, ods, xls, xlsx and xlsxm files.
- **python-docx** [<https://github.com/python-openxml/python-docx>] - Reads, queries and modifies Microsoft Word 2007/2008 docx files.
- **python-pptx** [<https://github.com/scanny/python-pptx>] - Python library for creating and updating PowerPoint (.pptx) files.
- **unoconv** [<https://github.com/unoconv/unoconv>] - Convert between any document format supported by LibreOffice/OpenOffice.
- **XlsxWriter** [<https://github.com/jmcnamara/XlsxWriter>] - A Python module for creating Excel .xlsx files.
- **xlwings** [<https://github.com/ZoomerAnalytics/xlwings>] - A BSD-licensed library that makes it easy to call Python from Excel and vice versa.
- **xlwt** [<https://github.com/python-excel/xlwt>] / **xlrd** [<https://github.com/python-excel/xlrd>] - Writing and reading data and formatting information from Excel files.
- PDF
 - **PDFMiner** [<https://github.com/euske/pdfminer>] - A tool for extracting information from PDF documents.
 - **PyPDF2** [<https://github.com/mstamy2/PyPDF2>] - A library capable of splitting, merging and transforming PDF pages.
 - **ReportLab** [<https://www.reportlab.com/opensource/>] - Allowing Rapid creation of rich PDF documents.
- Markdown
 - **Mistune** [<https://github.com/lepture/mistune>] - Fastest and full featured pure Python parsers of Markdown.

- **Python-Markdown** [<https://github.com/waylan/Python-Markdown>] - A Python implementation of John Gruber's Markdown.
- **YAML**
 - **PyYAML** [<http://pyyaml.org/>] - YAML implementations for Python.
- **CSV**
 - **csvkit** [<https://github.com/wireservice/csvkit>] - Utilities for converting to and working with CSV.
- **Archive**
 - **unp** [<https://github.com/mitsuhiko/unp>] - A command line tool that can unpack archives easily.

Static Site Generator

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

- **lektor** [<https://github.com/lektor/lektor>] - An easy to use static CMS and blog engine.
- **makesite** [<https://github.com/sunainapai/makesite>] - Simple, lightweight, and magic-free static site/blog generator (< 130 lines).
- **mkdocs** [<https://github.com/mkdocs/mkdocs/>] - Markdown friendly documentation generator.
- **nikola** [<https://github.com/getnikola/nikola>] - A static website and blog generator.
- **pelican** [<https://github.com/getpelican/pelican>] - Static site generator that supports Markdown and reST syntax.

Tagging

Libraries for tagging items.

- **django-taggit** [<https://github.com/jazzband/django-taggit>] - Simple tagging for Django.

Task Queues

Libraries for working with task queues.

- **celery** [<https://docs.celeryproject.org/en/stable/>] - An asynchronous task queue/job queue based on distributed message passing.
- **dramatiq** [<https://github.com/Bogdanp/dramatiq>] - A fast and reliable background task processing library for Python 3.
- **huey** [<https://github.com/coleifer/huey>] - Little multi-threaded task queue.
- **mrq** [<https://github.com/pricingassistant/mrq>] - A distributed worker task queue in Python using Redis & gevent.
- **rq** [<https://github.com/rq/rq>] - Simple job queues for Python.

Template Engine

Libraries and tools for templating and lexing.

- **Genshi** [<https://genshi.edgewall.org/>] - Python templating toolkit for generation of web-aware output.
- **Jinja2** [<https://github.com/pallets/jinja>] - A modern and designer friendly templating language.
- **Mako** [<http://www.makotemplates.org/>] - Hyperfast and lightweight templating for the Python platform.

Testing

Libraries for testing codebases and generating test data.

- Testing Frameworks
 - **hypothesis** [<https://github.com/HypothesisWorks/hypothesis>] - Hypothesis is an advanced Quickcheck style property based testing library.
 - **nose2** [<https://github.com/nose-devs/nose2>] - The successor to `nose`, based on `unittest2`.
 - **pytest** [<https://docs.pytest.org/en/latest/>] - A mature full-featured Python testing tool.
 - **Robot Framework** [<https://github.com/robotframework/robotframework>] - A generic test automation framework.
 - **unittest** [<https://docs.python.org/3/library/unittest.html>] - (Python standard library) Unit testing framework.
- Test Runners
 - **green** [<https://github.com/CleanCut/green>] - A clean, colorful test runner.
 - **mamba** [<https://nestorsalceda.github.io/mamba/>] - The definitive testing tool for Python. Born under the banner of BDD.
 - **tox** [<https://tox.readthedocs.io/en/latest/>] - Auto builds and tests distributions in multiple Python versions
- GUI / Web Testing
 - **locust** [<https://github.com/locustio/locust>] - Scalable user load testing tool written in Python.
 - **PyAutoGUI** [<https://github.com/asweigart/pyautogui>] - PyAutoGUI is a cross-platform GUI automation Python module for human beings.
 - **Schemathesis** [<https://github.com/kiwicom/schemathesis>] - A tool for automatic property-based testing of web applications built with Open API / Swagger specifications.
 - **Selenium** [<https://pypi.org/project/selenium/>] - Python bindings for **Selenium** [<http://www.seleniumhq.org/>] WebDriver.
 - **sixpack** [<https://github.com/seatgeek/sixpack>] - A language-agnostic A/B Testing framework.

- **splinter** [<https://github.com/cobrateam/splinter>] - Open source tool for testing web applications.
- Mock
 - **doublex** [<https://pypi.org/project/doublex/>] - Powerful test doubles framework for Python.
 - **freezegun** [<https://github.com/spulec/freezegun>] - Travel through time by mocking the datetime module.
 - **httmock** [<https://github.com/patrys/httmock>] - A mocking library for requests for Python 2.6+ and 3.2+.
 - **httpretty** [<https://github.com/gabrielfalcao/HTTPretty>] - HTTP request mock tool for Python.
 - **mock** [<https://docs.python.org/3/library/unittest.mock.html>] - (Python standard library) A mocking and patching library.
 - **mocket** [<https://github.com/mindflayer/python-mocket>] - A socket mock framework with gevent/asyncio/SSL support.
 - **responses** [<https://github.com/getsentry/responses>] - A utility library for mocking out the requests Python library.
 - **VCR.py** [<https://github.com/kevin1024/vcrpy>] - Record and replay HTTP interactions on your tests.
- Object Factories
 - **factory_boy** [https://github.com/FactoryBoy/factory_boy] - A test fixtures replacement for Python.
 - **mixer** [<https://github.com/klen/mixer>] - Another fixtures replacement. Supports Django, Flask, SQLAlchemy, Peewee and etc.
 - **model_mommy** [https://github.com/vandersonmota/model_mommy] - Creating random fixtures for testing in Django.
- Code Coverage
 - **coverage** [<https://pypi.org/project/coverage/>] - Code coverage measurement.

- Fake Data
 - **fake2db** [<https://github.com/emirozer/fake2db>] - Fake database generator.
 - **faker** [<https://github.com/joke2k/faker>] - A Python package that generates fake data.
 - **mimesis** [<https://github.com/lk-geimfari/mimesis>] - is a Python library that help you generate fake data.
 - **radar** [<https://pypi.org/project/radar/>] - Generate random datetime / time.

Text Processing

Libraries for parsing and manipulating plain texts.

- General
 - **chardet** [<https://github.com/chardet/chardet>] - Python 2/3 compatible character encoding detector.
 - **difflib** [<https://docs.python.org/3/library/difflib.html>] - (Python standard library) Helpers for computing deltas.
 - **ftfy** [<https://github.com/LuminosoInsight/python-ftfy>] - Makes Unicode text less broken and more consistent automatically.
 - **fuzzywuzzy** [<https://github.com/seatgeek/fuzzywuzzy>] - Fuzzy String Matching.
 - **Levenshtein** [<https://github.com/ztane/python-Levenshtein/>] - Fast computation of Levenshtein distance and string similarity.
 - **pangu.py** [<https://github.com/vinta/pangu.py>] - Paranoid text spacing.
 - **pyfiglet** [<https://github.com/pwaller/pyfiglet>] - An implementation of figlet written in Python.
 - **pypinyin** [<https://github.com/mozillazg/python-pinyin>] - Convert Chinese hanzi (漢字) to pinyin (拼音).

- **textdistance** [<https://github.com/orsinium/textdistance>] - Compute distance between sequences with 30+ algorithms.
- **unidecode** [<https://pypi.org/project/Unidecode/>] - ASCII transliterations of Unicode text.
- Slugify
 - **awesome-slugify** [<https://github.com/dimka665/awesome-slugify>] - A Python slugify library that can preserve unicode.
 - **python-slugify** [<https://github.com/un33k/python-slugify>] - A Python slugify library that translates unicode to ASCII.
 - **unicode-slugify** [<https://github.com/mozilla/unicode-slugify>] - A slugifier that generates unicode slugs with Django as a dependency.
- Unique identifiers
 - **hashids** [<https://github.com/davidaurelio/hashids-python>] - Implementation of **hashids** [<http://hashids.org>] in Python.
 - **shortuuid** [<https://github.com/skorokithakis/shortuuid>] - A generator library for concise, unambiguous and URL-safe UUIDs.
- Parser
 - **ply** [<https://github.com/dabeaz/ply>] - Implementation of lex and yacc parsing tools for Python.
 - **pygments** [<http://pygments.org/>] - A generic syntax highlighter.
 - **pyparsing** [<https://github.com/pyparsing/pyparsing>] - A general purpose framework for generating parsers.
 - **python-nameparser** [<https://github.com/derek73/python-nameparser>] - Parsing human names into their individual components.
 - **python-phonenumbers** [<https://github.com/daviddrysdale/python-phonenumbers>] - Parsing, formatting, storing and validating international phone numbers.
 - **python-user-agents** [<https://github.com/selwin/python-user-agents>] - Browser user agent parser.

- [sqlparse](https://github.com/andialbrecht/sqlparse) [https://github.com/andialbrecht/sqlparse] - A non-validating SQL parser.

Third-party APIs

Libraries for accessing third party services APIs. Also see [List of Python API Wrappers and Libraries](#) [https://github.com/realpython/list-of-python-api-wrappers].

- [apache-libcloud](https://libcloud.apache.org/) [https://libcloud.apache.org/] - One Python library for all clouds.
- [boto3](https://github.com/boto/boto3) [https://github.com/boto/boto3] - Python interface to Amazon Web Services.
- [django-wordpress](https://github.com/istrategylabs/django-wordpress) [https://github.com/istrategylabs/django-wordpress] - WordPress models and views for Django.
- [facebook-sdk](https://github.com/mobolic/facebook-sdk) [https://github.com/mobolic/facebook-sdk] - Facebook Platform Python SDK.
- [google-api-python-client](https://github.com/google/google-api-python-client) [https://github.com/google/google-api-python-client] - Google APIs Client Library for Python.
- [gspread](https://github.com/burnash/gspread) [https://github.com/burnash/gspread] - Google Spreadsheets Python API.
- [twython](https://github.com/ryanmcgrath/twython) [https://github.com/ryanmcgrath/twython] - A Python wrapper for the Twitter API.

URL Manipulation

Libraries for parsing URLs.

- [furl](https://github.com/gruns/furl) [https://github.com/gruns/furl] - A small Python library that makes parsing and manipulating URLs easy.
- [purl](https://github.com/codeinthehole/purl) [https://github.com/codeinthehole/purl] - A simple, immutable URL class with a clean API for interrogation and manipulation.

- **pyshorteners** [<https://github.com/ellisonleao/pyshorteners>] - A pure Python URL shortening lib.
- **webargs** [<https://github.com/marshmallow-code/webargs>] - A friendly library for parsing HTTP request arguments with built-in support for popular web frameworks.

Video

Libraries for manipulating video and GIFs.

- **moviepy** [<https://zulko.github.io/moviepy/>] - A module for script-based movie editing with many formats, including animated GIFs.
- **scikit-video** [<https://github.com/aizvorski/scikit-video>] - Video processing routines for SciPy.
- **vidgear** [<https://github.com/abhiTronix/vidgear>] - Most Powerful multi-threaded Video Processing framework.

Web Asset Management

Tools for managing, compressing and minifying website assets.

- **django-compressor** [<https://github.com/django-compressor/django-compressor>] - Compresses linked and inline JavaScript or CSS into a single cached file.
- **django-pipeline** [<https://github.com/jazzband/django-pipeline>] - An asset packaging library for Django.
- **django-storages** [<https://github.com/jschneier/django-storages>] - A collection of custom storage back ends for Django.
- **fanstatic** [<http://www.fanstatic.org/en/latest/>] - Packages, optimizes, and serves static file dependencies as Python packages.

- **fileconveyor** [<http://wimleers.com/fileconveyor>] - A daemon to detect and sync files to CDNs, S3 and FTP.
- **flask-assets** [<https://github.com/miracle2k/flask-assets>] - Helps you integrate webassets into your Flask app.
- **webassets** [<https://github.com/miracle2k/webassets>] - Bundles, optimizes, and manages unique cache-busting URLs for static resources.

Web Content Extracting

Libraries for extracting web contents.

- **html2text** [<https://github.com/Alir3z4/html2text>] - Convert HTML to Markdown-formatted text.
- **lassie** [<https://github.com/michaelhelmick/lassie>] - Web Content Retrieval for Humans.
- **micawber** [<https://github.com/coleifer/micawber>] - A small library for extracting rich content from URLs.
- **newspaper** [<https://github.com/codelucas/newspaper>] - News extraction, article extraction and content curation in Python.
- **python-readability** [<https://github.com/buriy/python-readability>] - Fast Python port of arc90's readability tool.
- **requests-html** [<https://github.com/psf/requests-html>] - Pythonic HTML Parsing for Humans.
- **sumy** [<https://github.com/miso-belica/sumy>] - A module for automatic summarization of text documents and HTML pages.
- **textract** [<https://github.com/deanmalmgren/textract>] - Extract text from any document, Word, PowerPoint, PDFs, etc.
- **toapi** [<https://github.com/gaojiuli/toapi>] - Every web site provides APIs.

Web Crawling

Libraries to automate web scraping.

- **cola** [<https://github.com/chineking/cola>] - A distributed crawling framework.
- **feedparser** [<https://pythonhosted.org/feedparser/>] - Universal feed parser.
- **grab** [<https://github.com/lorien/grab>] - Site scraping framework.
- **MechanicalSoup** [<https://github.com/MechanicalSoup/MechanicalSoup>] - A Python library for automating interaction with websites.
- **portia** [<https://github.com/scrapinghub/portia>] - Visual scraping for Scrapy.
- **pyspider** [<https://github.com/binux/pyspider>] - A powerful spider system.
- **robobrowser** [<https://github.com/jmcarp/robobrowser>] - A simple, Pythonic library for browsing the web without a standalone web browser.
- **scrapy** [<https://scrapy.org/>] - A fast high-level screen scraping and web crawling framework.

Web Frameworks

*Traditional full stack web frameworks. Also see **RESTful API** [<https://github.com/vinta/awesome-python#restful-api>].*

- Synchronous
 - **Django** [<https://www.djangoproject.com/>] - The most popular web framework in Python.
 - **awesome-django** [<https://github.com/shahraizali/awesome-django>]
 - **awesome-django** [<https://github.com/wsvincent/awesome-django>]
 - **Flask** [<http://flask.pocoo.org/>] - A microframework for Python.
 - **awesome-flask** [<https://github.com/humiaozuzu/awesome-flask>]
 - **Pyramid** [<https://pylonsproject.org/>] - A small, fast, down-to-earth, open source Python web framework.

- [awesome-pyramid](https://github.com/uralbash/awesome-pyramid) [https://github.com/uralbash/awesome-pyramid]
- [Masonite](https://github.com/MasoniteFramework/masonite) [https://github.com/MasoniteFramework/masonite] - The modern and developer centric Python web framework.
- Asynchronous
 - [Tornado](http://www.tornadoweb.org/en/latest/) [http://www.tornadoweb.org/en/latest/] - A web framework and asynchronous networking library.

WebSocket

Libraries for working with WebSocket.

- [autobahn-python](https://github.com/crossbario/autobahn-python) [https://github.com/crossbario/autobahn-python] - WebSocket & WAMP for Python on Twisted and [asyncio](https://docs.python.org/3/library/asyncio.html) [https://docs.python.org/3/library/asyncio.html].
- [channels](https://github.com/django/channels) [https://github.com/django/channels] - Developer-friendly asynchrony for Django.
- [websockets](https://github.com/aaugustin/websockets) [https://github.com/aaugustin/websockets] - A library for building WebSocket servers and clients with a focus on correctness and simplicity.

WSGI Servers

WSGI-compatible web servers.

- [bjoern](https://github.com/jonashaag/bjoern) [https://github.com/jonashaag/bjoern] - Asynchronous, very fast and written in C.
- [gunicorn](https://github.com/benoitc/gunicorn) [https://github.com/benoitc/gunicorn] - Pre-forked, ported from Ruby's Unicorn project.
- [uWSGI](https://uwsgi-docs.readthedocs.io/en/latest/) [https://uwsgi-docs.readthedocs.io/en/latest/] - A project aims at developing a full stack for building hosting services, written in C.
- [waitress](https://github.com/Pylons/waitress) [https://github.com/Pylons/waitress] - Multi-threaded, powers Pyramid.

- **werkzeug** [<https://github.com/pallets/werkzeug>] - A WSGI utility library for Python that powers Flask and can easily be embedded into your own projects.

Resources

Where to discover learning resources or new Python libraries.

Books

- **Fluent Python** [<https://www.oreilly.com/library/view/fluent-python/9781491946237/>]
- **Think Python** [<https://greenteapress.com/wp/think-python-2e/>]

Websites

- Tutorials
 - **Full Stack Python** [<https://www.fullstackpython.com/>]
 - **Python Cheatsheet** [<https://www.pythoncheatsheet.org/>]
 - **Real Python** [<https://realpython.com>]
 - **The Hitchhiker's Guide to Python** [<https://docs.python-guide.org/>]
 - **Ultimate Python study guide** [<https://github.com/huangsam/ultimate-python>]
- Libraries
 - **Awesome Python @LibHunt** [<https://python.libhunt.com/>]
- Others
 - **Python ZEEF** [<https://python.zeef.com/alan.richmond>]
 - **Pythonic News** [<https://news.python.sc/>]
 - **What the f*ck Python!** [<https://github.com/satwikkansal/wtfpython>]

Newsletters

- [Awesome Python Newsletter](http://python.libhunt.com/newsletter) [http://python.libhunt.com/newsletter]
- [Pycoder's Weekly](http://pycoders.com/) [http://pycoders.com/]
- [Python Tricks](https://realpython.com/python-tricks/) [https://realpython.com/python-tricks/]
- [Python Weekly](http://www.pythonweekly.com/) [http://www.pythonweekly.com/]

Podcasts

- [Django Chat](https://djangochat.com/) [https://djangochat.com/]
- [Podcast.__init__](https://podcastinit.com/) [https://podcastinit.com/]
- [Python Bytes](https://pythonbytes.fm) [https://pythonbytes.fm]
- [Running in Production](https://runninginproduction.com/) [https://runninginproduction.com/]
- [Talk Python To Me](https://talkpython.fm/) [https://talkpython.fm/]
- [Test and Code](https://testandcode.com/) [https://testandcode.com/]
- [The Real Python Podcast](https://realpython.com/podcasts/rpp/) [https://realpython.com/podcasts/rpp/]

Contributing

Your contributions are always welcome! Please take a look at the [contribution guidelines](https://github.com/vinta/awesome-python/blob/master/CONTRIBUTING.md) [https://github.com/vinta/awesome-python/blob/master/CONTRIBUTING.md] first.

I will keep some pull requests open if I'm not sure whether those libraries are awesome, you could [vote for them](https://github.com/vinta/awesome-python/pulls) [https://github.com/vinta/awesome-python/pulls] by adding `:+1:` to them. Pull requests will be merged when their votes reach **20**.

If you have any question about this opinionated list, do not hesitate to contact me
[@VintaChen](https://twitter.com/VintaChen) [<https://twitter.com/VintaChen>] on Twitter or open an issue on GitHub.