



SWCON104
Web & Python Programming

3rd Party Packages

Department of Software Convergence

Today

- Expand programming capability via 3rd-party packages

Practice

- Codes in 3rd party package sites [select one, follow codes]

- pip는 파이썬(python)으로 작성된 패키지 소프트웨어를 설치 및 관리하는 패키지 관리 시스템이다. Python Package Index (PyPI)에서 많은 파이썬 패키지를 볼 수 있다. 파이썬 2.7.9 이후 버전과 파이썬 3.4 이후 버전은 pip를 기본적으로 포함한다. 2020년 1월 1일자로 파이썬 2의 지원이 종료되었다. 현재는 파이썬 3 버전이 기본으로 지원 및 포함하고 있다.
- <https://pypi.org/project/pip/>

PyInstaller Install example

빠른 시작

요구 사항이 설치되어 있는지 확인한 다음 PyPI에서 PyInstaller를 설치합니다.

```
pip install -U pyinstaller
```





Search projects 🔍

Help Sponsors Log in Register

pip 22.3

`pip install pip` 

Latest version  Released: Oct 15, 2022

The PyPA recommended tool for installing Python packages.

Navigation

 Project description

 Release history

 Download files

Project links

 Homepage

 Changelog

 Documentation

 Source

Project description

 v22.3  passing

pip is the [package installer](#) for Python. You can use pip to install packages from the [Python Package Index](#) and other indexes.

Please take a look at our documentation for how to install and use pip:

- [Installation](#)
- [Usage](#)

We release updates regularly, with a new version every 3 months. Find more details in our documentation:

- [Release notes](#)
- [Release process](#)

In pip 20.3, we've [made a big improvement to the heart of pip](#); [learn more](#). We want your input, so [sign up for our user experience research studies](#) to help us do it right.

PyInstaller

- PyInstaller는 Python 애플리케이션과 모든 종속성을 단일 패키지로 묶습니다. 사용자는 Python 인터프리터 또는 모듈을 설치하지 않고 패키지된 앱을 실행할 수 있습니다.
- <https://pyinstaller.org/>

PyInstaller



파이 인스톨러
안정적인
문서 검색

요구 사항
특허
기여 방법
PyInstaller를 설치하는 방법
PyInstaller가 하는 일과 하는 일
파이 인스톨러 사용
런타임 정보
사양 파일 사용
특정 기능에 대한 참고 사항
일이 잘못될 때
고급 주제
PyInstaller 후크 이해
후크 구성 옵션
부트로더 빌드
PyInstaller에 대한 변경 로그
크레딧
매뉴얼 페이지
개발 가이드

» 파이 인스톨러 매뉴얼

[GitHub에서 편집](#)

파이 인스톨러 매뉴얼

버전:	파이 인스톨러 5.6.2
홈페이지:	https://pyinstaller.org/
연락하다:	pyinstaller @ googlegroups . com
저자:	David Cortesi, Giovanni Bajo & William Caban의 구조 기반, Gordon McMillan의 매뉴얼 기반
저작권:	이 문서는 공개 도메인에 배치되었습니다.

PyInstaller는 Python 애플리케이션과 모든 종속성을 단일 패키지로 묶습니다. 사용자는 Python 인터프리터 또는 모듈을 설치하지 않고 패키지된 앱을 실행할 수 있습니다. PyInstaller는 Python 3.7 이상을 지원하며 numpy, matplotlib, PyQt, wxPython 등과 같은 많은 주요 Python 패키지를 올바르게 번들로 제공합니다.

PyInstaller는 Windows, MacOS X 및 Linux에서 테스트되었습니다. 그러나 이것은 크로스 컴파일러가 아닙니다. Windows 앱을 만들려면 Windows에서 PyInstaller를 실행하고 Linux 앱을 만들려면 Linux 등에서 실행합니다. x PyInstaller는 AIX, Solaris, FreeBSD 및 OpenBSD에서 성공적으로 사용되었지만 이에 대한 테스트는 지속적인 통합의 일부가 아닙니다. 테스트 및 개발 팀은 PyInstaller가 이러한 플랫폼에서 작동하거나 계속 지원될 것이라는 보장을 제공하지 않습니다(이 플랫폼의 모든 코드는 외부 기여에서 제공됨).

빠른 시작

요구 사항이 설치되어 있는지 확인한 다음 PyPI에서 PyInstaller를 설치합니다.

```
pip install -U pyinstaller
```

- SciPy(사이파이)는 과학 컴퓨팅과 기술 컴퓨팅에 사용되는 자유-오픈 소스 파이썬 라이브러리이다.
- <https://scipy.org/>

Install Documentation Download Community About Us Contribute

SciPy

Fundamental algorithms for scientific computing in Python

[GET STARTED](#)

SciPy 1.9.3 released! 2022-10-19

FUNDAMENTAL ALGORITHMS
SciPy provides algorithms for optimization, integration, interpolation, eigenvalue problems, algebraic equations, differential equations, statistics and many other classes of problems.

[View Examples](#)

BROADLY APPLICABLE
The algorithms and data structures provided by SciPy are broadly applicable across domains.

[View Examples](#)

FOUNDATIONAL
Extends NumPy providing additional tools for array computing and provides specialized data structures, such as sparse matrices and k-dimensional trees.

[View Examples](#)

PERFORMANT
SciPy wraps highly-optimized implementations written in low-level languages like Fortran, C, and C++. Enjoy the flexibility of Python with the speed of compiled code.

[View Examples](#)

EASY TO USE
SciPy's high level syntax makes it accessible and productive for programmers from any background or experience level.

[View Examples](#)

OPEN SOURCE
Distributed under a liberal [BSD license](#), SciPy is developed and maintained [publicly on GitHub](#) by a vibrant, responsive, and diverse [community](#).

[View Examples](#)

SciPy ([w3schools.com](https://www.w3schools.com/python/scipy/index.php))

SciPy Tutorial

SciPy Home

- SciPy Intro
- SciPy Getting Started
- SciPy Constants
- SciPy Optimizers
- SciPy Sparse Data
- SciPy Graphs
- SciPy Spatial Data
- SciPy Matlab Arrays
- SciPy Interpolation
- SciPy Significance Tests

Quiz/Exercises

- SciPy Quiz
- SciPy Exercises

SciPy Tutorial

[Home](#) [Next](#)

SciPy is a scientific computation library that uses [NumPy](#) underneath.

SciPy stands for Scientific Python.

[+ :]

Learning by Reading

We have created 10 tutorial pages for you to learn the fundamentals of SciPy:

Basic SciPy

[Introduction](#) [Getting Started](#)

NumPy

- NumPy("넘파이"라 읽는다)는 행렬이나 일반적으로 대규모 다차원 배열을 쉽게 처리할 수 있도록 지원하는 파이썬의 라이브러리이다. NumPy는 데이터 구조 외에도 수치 계산을 위해 효율적으로 구현된 기능을 제공한다.
- <https://numpy.org/>



The fundamental package for scientific computing with Python

[GET STARTED](#)

NumPy 1.23.0 released

POWERFUL N-DIMENSIONAL ARRAYS

Fast and versatile, the NumPy vectorization, indexing, and broadcasting concepts are the de-facto standards of array computing today.

NUMERICAL COMPUTING TOOLS

NumPy offers comprehensive mathematical functions, random number generators, linear algebra routines, Fourier transforms, and more.

INTEROPERABLE

NumPy supports a wide range of hardware and computing platforms, and plays well with distributed, GPU, and sparse array libraries.

PERFORMANT

The core of NumPy is well-optimized C code. Enjoy the flexibility of Python with the speed of compiled code.

EASY TO USE

NumPy's high level syntax makes it accessible and productive for programmers from any background or experience level.

OPEN SOURCE

Distributed under a liberal [BSD license](#), NumPy is developed and maintained [publicly on GitHub](#) by a vibrant, responsive, and diverse [community](#).

NumPy ([w3schools.com](https://www.w3schools.com/python(numpy/default.asp))

Home [HTML](#) [CSS](#) [JAVASCRIPT](#) [SQL](#) **PYTHON** [JAVA](#) [PHP](#) [BOOTSTRAP](#) [HOW TO](#) [W3.CSS](#)

NumPy Tutorial

[NumPy HOME](#)

- [NumPy Intro](#)
- [NumPy Getting Started](#)
- [NumPy Creating Arrays](#)
- [NumPy Array Indexing](#)
- [NumPy Array Slicing](#)
- [NumPy Data Types](#)
- [NumPy Copy vs View](#)
- [NumPy Array Shape](#)
- [NumPy Array Reshape](#)
- [NumPy Array Iterating](#)
- [NumPy Array Join](#)
- [NumPy Array Split](#)
- [NumPy Array Search](#)
- [NumPy Array Sort](#)
- [NumPy Array Filter](#)

NumPy Tutorial

[Home](#) [Next >](#)

NumPy is a Python library.

NumPy is used for working with arrays.

NumPy is short for "Numerical Python".

[+ :]

Learning by Reading

We have created 43 tutorial pages for you to learn more about NumPy.

Starting with a basic introduction and ends up with creating and plotting random data sets, and working with NumPy functions:

[Basic](#) [Random](#) [ufunc](#)



Pandas

- pandas는 데이터 조작 및 분석을 위한 Python 프로그래밍 언어 용으로 작성된 소프트웨어 라이브러리입니다. 특히 숫자 테이블과 시계열을 조작하기 위한 데이터 구조 와 연산을 제공합니다. 이것은 무료 소프트웨어이며 New BSD 라이센스입니다. pandas란 이름은 한 개인에 대해 여러 기간동안 관찰을 한다는 데이터 세트에 대한 계량 경제학 용어인 "패널 데이터"라는 용어에서 파생되었습니다. 또한 "Python 데이터 분석"이라는 문구 자체에서 따온 것입니다. Wes McKinney 는 2007년부터 2010년까지 연구원으로 있을 때 AQR Capital에서 pandas를 만들기 시작했습니다.
- <https://pandas.pydata.org/>

Pandas

 pandas

About us ▾ Getting started Documentation Community ▾ Contribute

pandas

pandas is a fast, powerful, flexible and easy to use open source data analysis and manipulation tool, built on top of the Python programming language.

[Install pandas now!](#)

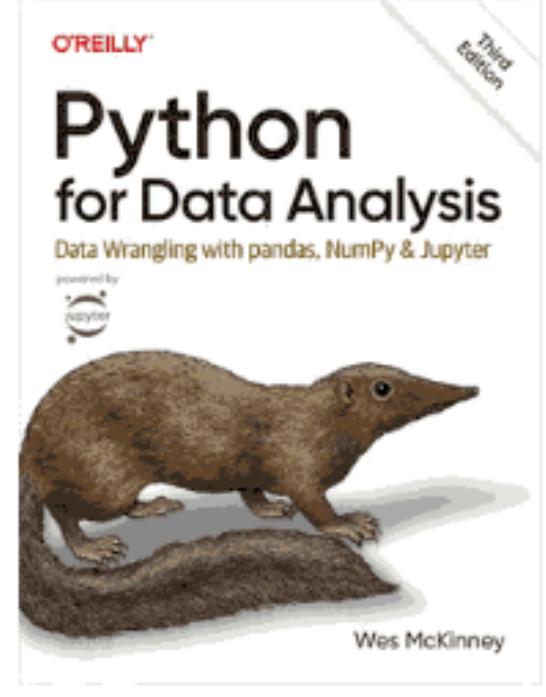
Latest version: 1.5.1

- What's new in 1.5.1
- Release date:
Oct 19, 2022
- Documentation (web)
- Download source code

Follow us

Get the book



Getting started

- Install pandas
- Getting started

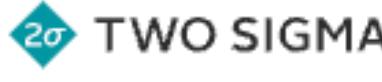
Documentation

- User guide
- API reference
- Contributing to pandas
- Release notes

Community

- About pandas
- Ask a question
- Ecosystem

With the support of:








The full list of companies supporting pandas is available in the [sponsors page](#).

Previous versions

- 1.5.0 (Sep 19, 2022)
[changelog](#) | [docs](#) | [code](#)
- 1.4.4 (Aug 31, 2022)
[changelog](#) | [docs](#) | [code](#)
- 1.4.3 (Jun 23, 2022)
[changelog](#) | [docs](#) | [code](#)
- 1.4.2 (Apr 02, 2022)
[changelog](#) | [docs](#) | [code](#)

[Show more](#)

Pandas ([w3schools.com](https://www.w3schools.com/python/pandas/default.asp))

Home [HTML](#) [CSS](#) [JAVASCRIPT](#) [SQL](#) **Python** [Java](#) [PHP](#) [Bootstrap](#) [How To](#) [W3.CSS](#)

Pandas Tutorial

[Pandas HOME](#)

[Pandas Intro](#)
[Pandas Getting Started](#)
[Pandas Series](#)
[Pandas DataFrames](#)
[Pandas Read CSV](#)
[Pandas Read JSON](#)
[Pandas Analyzing Data](#)

Cleaning Data

[Cleaning Data](#)
[Cleaning Empty Cells](#)
[Cleaning Wrong Format](#)
[Cleaning Wrong Data](#)
[Removing Duplicates](#)

Correlations

[Pandas Correlations](#)

Plotting

[Pandas Plotting](#)

Pandas Tutorial

[Home](#) [Next](#)

Pandas is a Python library.

Pandas is used to analyze data.

[+:]

Learning by Reading

We have created 14 tutorial pages for you to learn more about Pandas.

Starting with a basic introduction and ends up with cleaning and plotting data:

Basic **Cleaning Data** **Advanced**

[Introduction](#) [Clean Data](#) [Correlations](#)



Matplot

- **Matplotlib는 Python 프로그래밍 언어 및 수학적 확장 NumPy 라이브러리를 활용한 플로팅 라이브러리입니다.** Tkinter , wxPython , Qt 또는 GTK 와 같은 범용 GUI 툴킷을 사용하여 애플리케이션에 플롯을 포함 하기 위한 객체 지향 API를 제공합니다. Matplotlib은 매트랩과 유사하게 설계된 상태기계(예: OpenGL)을 기반으로 하는 절차적 "pylab" 인터페이스도 있지만 사용은 권장되지 않습니다. SciPy는 Matplotlib을 활용합니다.
- <https://matplotlib.org/>

Matplot

matplotlib

Plot types Examples Tutorials Reference User guide Develop Release notes

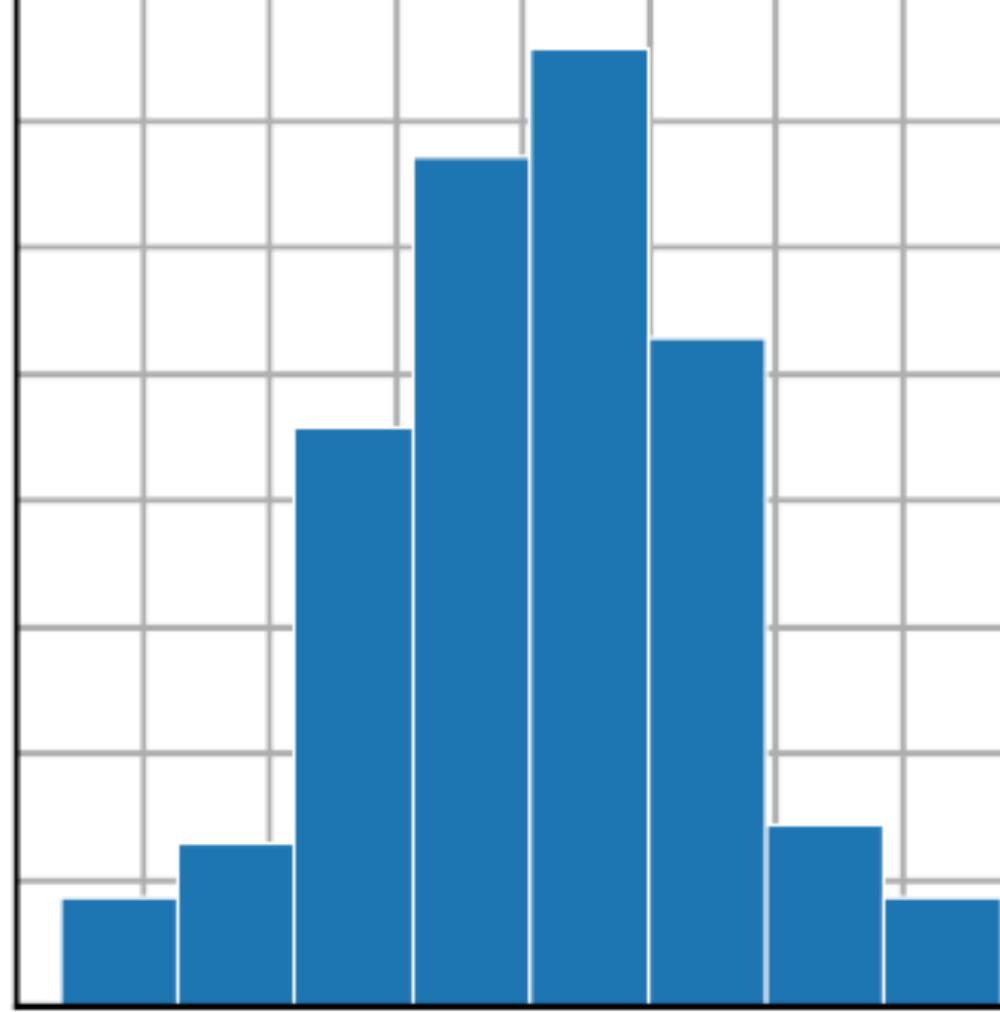
Search icon | Help icon | Discourse icon | GitHub icon | Twitter icon

Matplotlib: Visualization with Python

Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in Python. Matplotlib makes easy things easy and hard things possible.

- Create [publication quality plots](#).
- Make [interactive figures](#) that can zoom, pan, update.
- Customize [visual style](#) and [layout](#).
- Export to many file formats.
- Embed in JupyterLab and Graphical User Interfaces.
- Use a rich array of [third-party packages](#) built on Matplotlib.

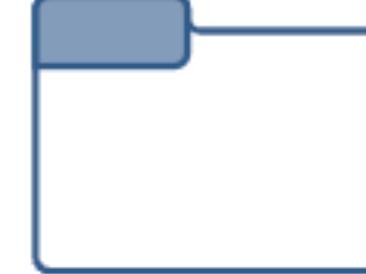
[Try Matplotlib \(on Binder\)](#) →



hist(x)



Getting Started



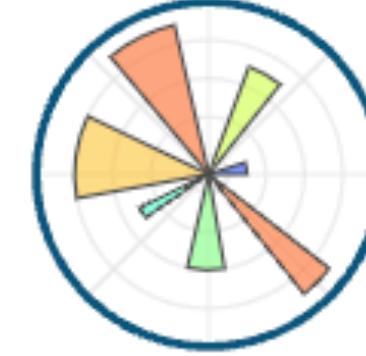
Examples



Reference



Cheat Sheets



Documentation

News

September 16, 2022
[Matplotlib 3.6.0 Released](#) →

May 2, 2022
[Matplotlib 3.5.2 Released](#) →

Resources

 Be sure to check the [Users guide](#) and the [API docs](#). The full text [search](#) is a good way to discover the docs including the many examples.

 Join our community at discourse.matplotlib.org to get help, share your work, and discuss contributing & development.

 KYUNG HEE UNIVERSITY

Reference: <https://matplotlib.org/> 18

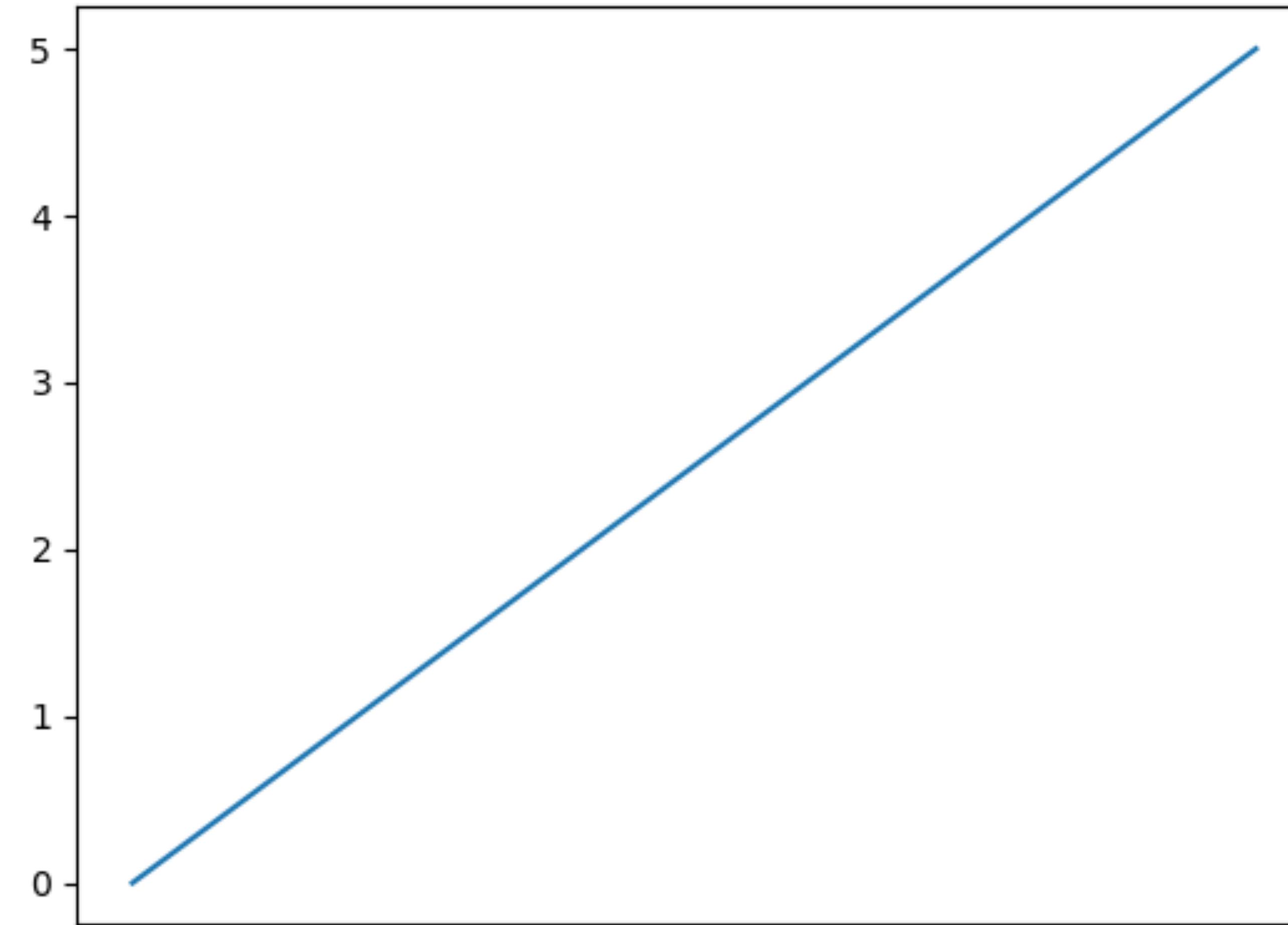
Matplot ([w3schools.com](https://www.w3schools.com/python/matplotlib_intro.asp))

Home [HTML](#) [CSS](#) [JAVASCRIPT](#) [SQL](#) **PYTHON** [JAVA](#) [PHP](#) [BOOTSTRAP](#) [HOW TO](#) [W3.CSS](#)

Python Operators
Python Lists
Python Tuples
Python Sets
Python Dictionaries
Python If...Else
Python While Loops
Python For Loops
Python Functions
Python Lambda
Python Arrays
Python Classes/Objects
Python Inheritance
Python Iterators
Python Scope
Python Modules
Python Dates
Python Math
Python JSON
Python RegEx
Python PIP
Python Try...Except
Python User Input

Matplotlib Tutorial

[Previous](#) [Next](#)



Scikit-learn

- Scikit-learn(이전 명칭: scikits.learn, sklearn)은 파이썬 프로그래밍 언어용 자유 소프트웨어 기계 학습 라이브러리이다. 다양한 분류, 회귀, 그리고 서포트 벡터 머신, 랜덤 포레스트, 그라디언트 부스팅, k-평균, DBSCAN을 포함한 클러스터링 알고리즘을 특징으로 하며, 파이썬의 수치 및 과학 라이브러리 NumPy 및 SciPy와 함께 운용되도록 설계되었다. Scikit-learn은 NumFOCUS의 재정 지원을 받는 프로젝트이다.
- <https://scikit-learn.org/>

Scikit-learn

scikit learn Install User Guide API Examples Community More ▾

scikit-learn

Machine Learning in Python

Getting Started Release Highlights for 1.1 GitHub

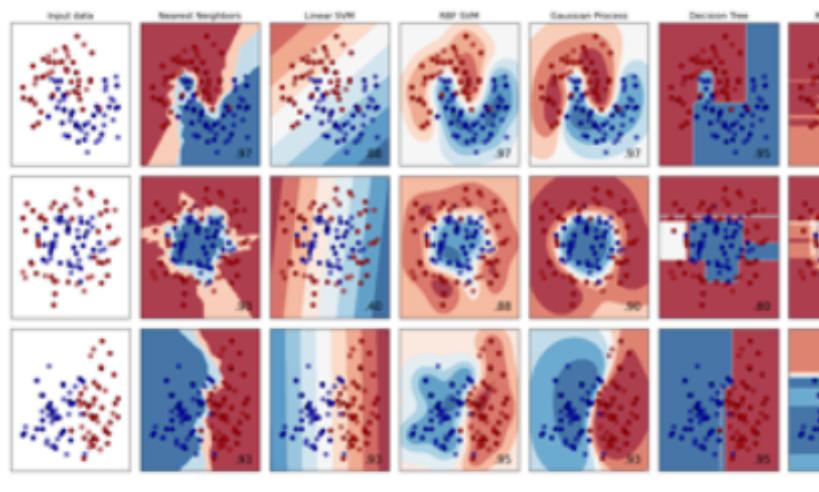
- Simple and efficient tools for predictive data analysis
- Accessible to everybody, and reusable in various contexts
- Built on NumPy, SciPy, and matplotlib
- Open source, commercially usable - BSD license

Classification

Identifying which category an object belongs to.

Applications: Spam detection, image recognition.

Algorithms: SVM, nearest neighbors, random forest, and more...



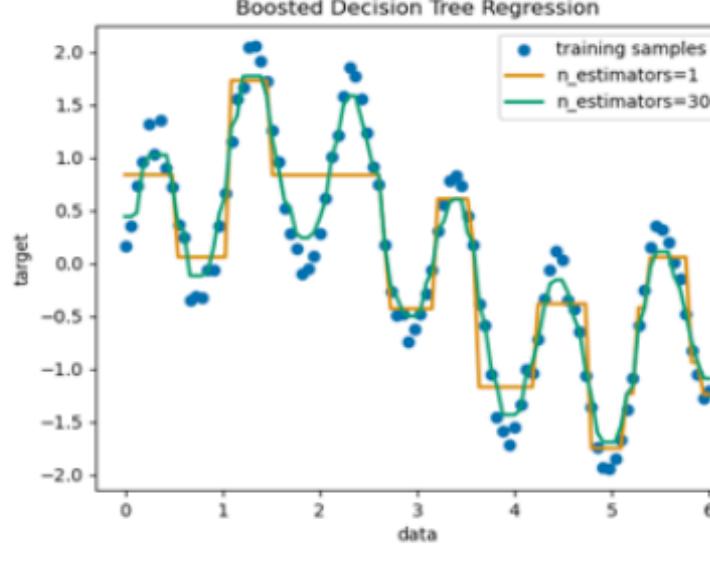
Examples

Regression

Predicting a continuous-valued attribute associated with an object.

Applications: Drug response, Stock prices.

Algorithms: SVR, nearest neighbors, random forest, and more...



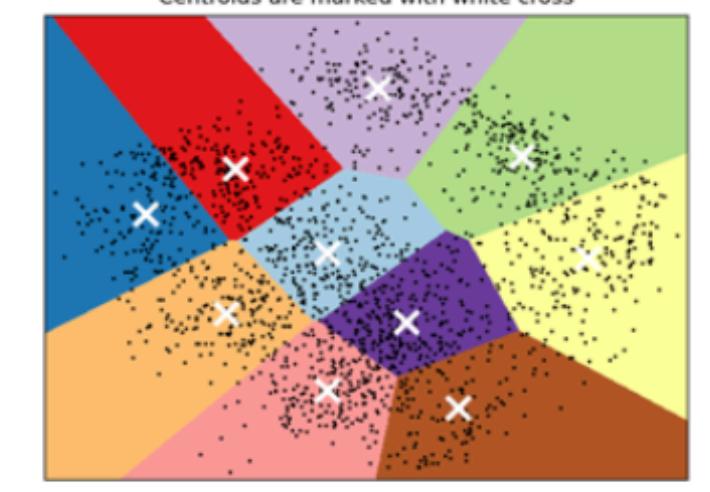
Examples

Clustering

Automatic grouping of similar objects into sets.

Applications: Customer segmentation, Grouping experiment outcomes

Algorithms: k-Means, spectral clustering, mean-shift, and more...



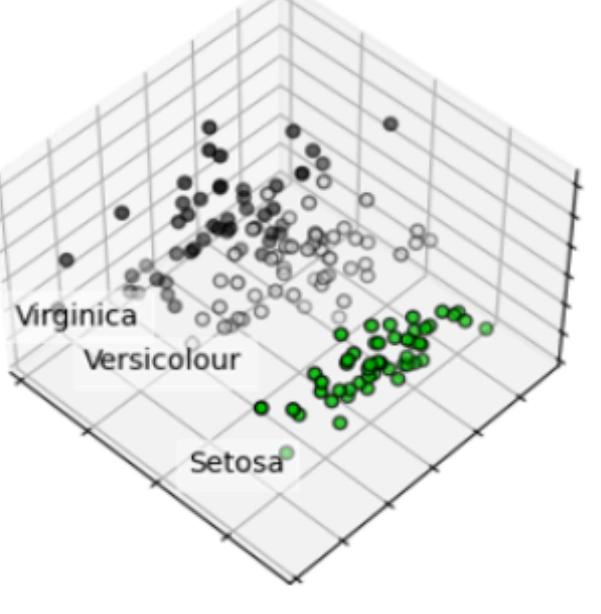
Examples

Dimensionality reduction

Reducing the number of random variables to consider.

Applications: Visualization, Increased efficiency

Algorithms: PCA, feature selection, non-negative matrix factorization, and more...



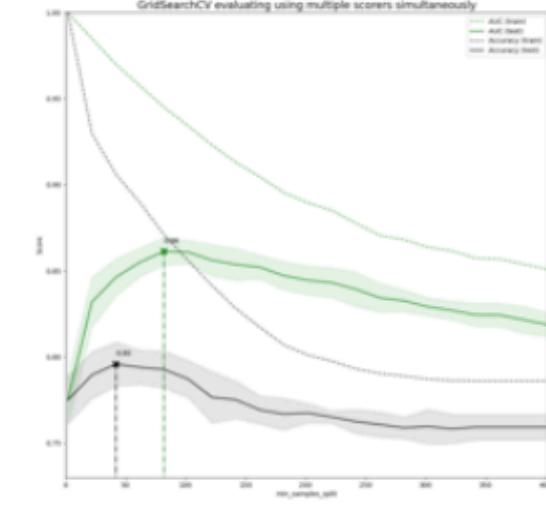
Examples

Model selection

Comparing, validating and choosing parameters and models.

Applications: Improved accuracy via parameter tuning

Algorithms: grid search, cross validation, metrics, and more...



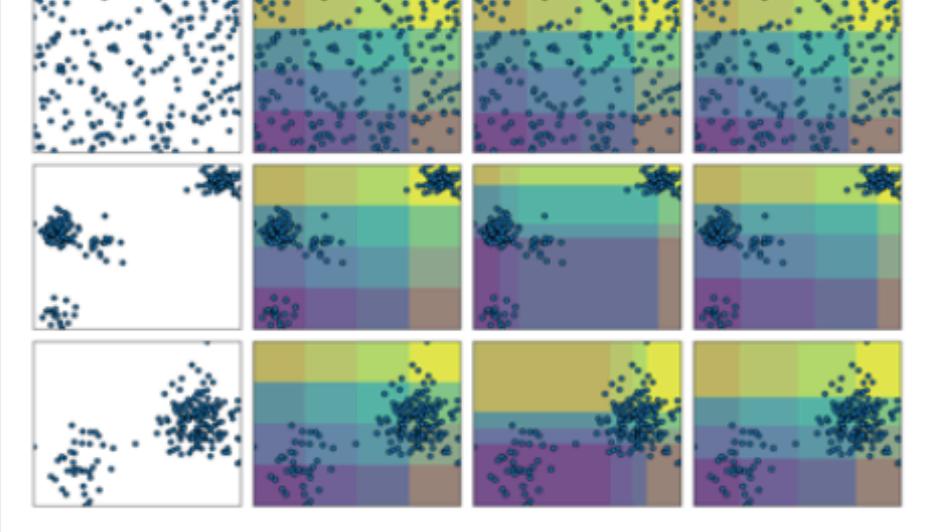
Examples

Preprocessing

Feature extraction and normalization.

Applications: Transforming input data such as text for use with machine learning algorithms.

Algorithms: preprocessing, feature extraction, and more...



Examples



TensorFlow

- 텐서플로(TensorFlow) 또는 텐서플로우는 다양한 작업에 대해 데이터 흐름 프로그래밍을 위한 오픈소스 소프트웨어 라이브러리이다. 심볼릭 수학 라이브러리이자, 인공 신경망같은 기계 학습 응용프로그램 및 딥러닝(deep Learning)에도 사용된다. 이것은 구글내 연구와 제품개발을 위한 목적으로 구글 브레인팀이 만들었고 2015년 11월 9일 아파치 2.0 오픈 소스 라이선스로 공개되었다.
- <https://www.tensorflow.org/>

TensorFlow

The screenshot shows the official TensorFlow website. At the top, there is a navigation bar with links for '설치' (Installation), '학습' (Learning), 'API' (API), '리소스' (Resources), and '더보기' (More). A search bar is located next to a 'Language' dropdown set to Korean. There are also links for 'GitHub' and '로그인' (Login).

Below the navigation bar, a message indicates the page was 'translated by Google'. A button labeled 'Switch to English' is available.

A large graphic in the background features a stylized illustration of a person working at a computer, a dog sitting near a person holding a phone, and various abstract shapes like wavy lines and circles in orange, grey, and white.

A central callout box contains the text 'TF 2.10이 출시되었습니다.' followed by a link '릴리스 보기'.

TensorFlow로 프로덕션 등급 머신 러닝 모델 만들기

Three main options are listed below the title:

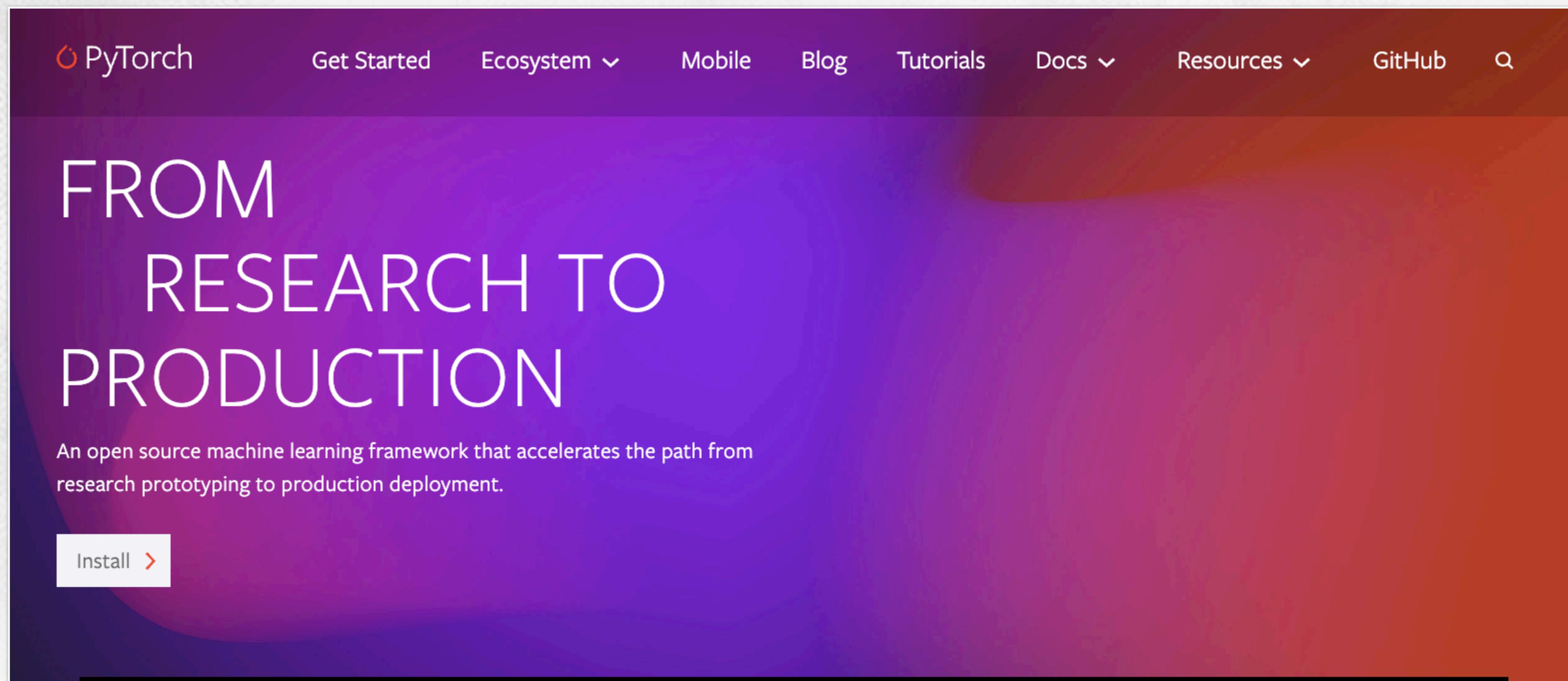
- 사전 훈련된 모델을 사용하거나
직접 훈련
- 모든 기술 수준에 맞는 ML 솔루션 찾기
- 연구에서 생산으로 이동

At the bottom, there are two buttons: 'TensorFlow' and '살펴보기 생태계 살펴보기'.

PyTorch

- PyTorch는 Python을 위한 오픈소스 머신 러닝 라이브러리이다. Torch를 기반으로 하며, 자연어 처리와 같은 애플리케이션을 위해 사용된다. GPU 사용이 가능하기 때문에 속도가 상당히 빠르다. 아직까지는 Tensorflow의 사용자가 많지만, 비직관적인 구조와 난이도 때문에, Pytorch의 사용자가 늘어나고 있는 추세이다. 이는 Facebook의 인공지능 연구팀이 개발했으며, Uber의 “Pyro”(확률론적 프로그래밍 언어)소프트웨어가 Pytorch를 기반으로 한다.
- <https://pytorch.org/>

PyTorch



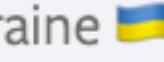
The banner features a large, bold title "FROM RESEARCH TO PRODUCTION" in white. Below it is a subtitle: "An open source machine learning framework that accelerates the path from research prototyping to production deployment." A prominent "Install >" button is located at the bottom left of the banner area.

1.13 Core blog: PyTorch 1.13 release, including beta versions of functorch and improved support for Apple's new M1 chips. < >

KEY FEATURES & CAPABILITIES

[See all Features >](#)

Production Ready	Distributed Training	Robust Ecosystem	Cloud Support
Transition seamlessly between eager and graph modes with TorchScript, and accelerate the path to production with TorchServe.	Scalable distributed training and performance optimization in research and production is enabled by the torch.distributed backend.	A rich ecosystem of tools and libraries extends PyTorch and supports development in computer vision, NLP and more.	PyTorch is well supported on major cloud platforms, providing frictionless development and easy scaling.

Support Ukraine 
[Help Provide Humanitarian Aid to Ukraine.](#)



OpenCV

- **OpenCV(Open Source Computer Vision)**은 실시간 컴퓨터 비전을 목적으로 한 프로그래밍 라이브러리이다. 원래는 인텔이 개발하였다. 실시간 이미지 프로세싱에 중점을 둔 라이브러리이다. 인텔 CPU에서 사용되는 경우 속도의 향상을 볼 수 있는 IPP(Intel Performance Primitives)를 지원한다. 이 라이브러리는 윈도우, 리눅스 등에서 사용 가능한 크로스 플랫폼이며 오픈소스 BSD 허가서 하에서 무료로 사용할 수 있다. OpenCV는 TensorFlow, Torch / PyTorch 및 Caffe의 딥러닝 프레임워크를 지원한다.
- <https://opencv.org/>

The OpenCV website features a prominent purple-to-blue gradient banner at the top. On the left side of the banner is the OpenCV logo, which consists of three overlapping circles in red, green, and blue. Below the logo, the word "OpenCV" is written in white. To the right of the logo, there is a horizontal navigation menu with links: Library, Forum, Courses, Services, Store, Contribute, Resources, and a magnifying glass icon for search. The main title "OpenCV Face Recognition" is displayed in large, bold, white font. Below the title, a subtitle reads: "The world's largest Computer Vision library meets the world's top-rated Face Recognition technology." A "Learn More" button is located in the center of the banner. At the bottom of the page, there is a row of nine circular icons, each representing a different feature or resource: GitHub, Documentation, Tutorials, Q&A Forum, Courses, Wiki, Build Farm, Report A Bug, and Donate. Each icon is accompanied by its respective label in black text.

Library Forum Courses Services Store Contribute Resources

OpenCV Face Recognition

The world's largest Computer Vision library meets
the world's top-rated Face Recognition technology.

Learn More

Github Documentation Tutorials Q&A Forum Courses Wiki Build Farm Report A Bug Donate

Beautiful Soup

- 뷰티풀 수프(Beautiful Soup)는 HTML과 XML 문서들의 구문을 분석하기 위한 파이썬 패키지이다. HTML로부터 데이터를 추출하기 위해 사용할 수 있는 파싱된 페이지의 파스 트리를 만드는데, 이는 웹 스크래핑에 유용하다.
- <https://www.crummy.com/software/BeautifulSoup/>

Beautiful Soup

[[Download](#) | [Documentation](#) | [Hall of Fame](#) | [For enterprise](#) | [Source](#) | [Changelog](#) | [Discussion group](#) | [Zine](#)]

[Beautiful Soup](#)

You didn't write that awful page. You're just trying to get some data out of it. Beautiful Soup is here to help. Since 2004, it's been saving programmers hours or days of work on quick-turnaround screen scraping projects.

Beautiful Soup is a Python library designed for quick turnaround projects like screen-scraping. Three features make it powerful:

1. Beautiful Soup provides a few simple methods and Pythonic idioms for navigating, searching, and modifying a parse tree: a toolkit for dissecting a document and extracting what you need. It doesn't take much code to write an application
2. Beautiful Soup automatically converts incoming documents to Unicode and outgoing documents to UTF-8. You don't have to think about encodings, unless the document doesn't specify an encoding and Beautiful Soup can't detect one. Then you just have to specify the original encoding.
3. Beautiful Soup sits on top of popular Python parsers like [xml](#) and [html5lib](#), allowing you to try out different parsing strategies or trade speed for flexibility.

Beautiful Soup parses anything you give it, and does the tree traversal stuff for you. You can tell it "Find all the links", or "Find all the links of class `externalLink`", or "Find all the links whose urls match "foo.com", or "Find the table heading that's got bold text, then give me that text."

Valuable data that was once locked up in poorly-designed websites is now within your reach. Projects that would have taken hours take only minutes with Beautiful Soup.

Interested? [Read more.](#)

Getting and giving support



If you have questions, send them to [the discussion group](#). If you find a bug, [file it on Launchpad](#). If it's a security vulnerability, report it confidentially through [Tidelift](#).

If you use Beautiful Soup as part of your work, please consider a [Tidelift subscription](#). This will support many of the free software projects your organization depends on, not just Beautiful Soup.

If Beautiful Soup is useful to you on a personal level, you might like to read [Tool Safety](#), a short zine I wrote about what I learned about software development from working on Beautiful Soup. Thanks!



Selenium

- **셀레늄(Selenium)**은 웹 애플리케이션 자동화 및 테스트를 위한 포터블 프레임워크이다. 셀레늄은 테스트 스크립트 언어를 학습할 필요 없이 기능 테스트를 만들기 위한 플레이백 도구를 제공한다. (셀례늄 IDE) C 샤프, 그루비, 자바, 펄, PHP, 파이썬, 루비, 스칼라 등 수많은 유명 프로그래밍 언어들에서 테스트를 작성하기 위한 테스트 도메인 특화 언어(**Selenese**)를 제공한다. 이 테스트들은 현대의 대부분의 웹 브라우저에서 수행이 가능하다. 셀레늄은 윈도우, 리눅스, macOS 플랫폼에서 디플로이된다. 아파치 2.0 라이선스로 배포되는 오픈 소스 소프트웨어이다. 웹 개발자는 무료로 다운로드, 사용할 수 있다.
- <https://www.selenium.dev/>

Selenium

Selenium

About ▾ Downloads Documentation Projects Support Blog English ▾

Search ⌘ K

Selenium automates browsers. That's it!

What you do with that power is entirely up to you.

Primarily it is for automating web applications for testing purposes, but is certainly not limited to just that.
Boring web-based administration tasks can (and should) also be automated as well.

Selenium Conference Chicago 2023 ×

The next SeleniumConf will be an in-person event in Chicago, March 28-30, 2023. [Learn More](#)

Getting Started



Selenium WebDriver

If you want to create robust, browser-based regression automation suites and tests, scale and distribute scripts across many environments, then you want to use Selenium WebDriver, a collection of language specific bindings to drive a browser - the way it is meant to be driven.

[READ MORE ▶](#)



Selenium IDE

If you want to create quick bug reproduction scripts, create scripts to aid in automation-aided exploratory testing, then you want to use Selenium IDE; a Chrome, Firefox and Edge add-on that will do simple record-and-playback of interactions with the browser.

[READ MORE ▶](#)



Selenium Grid

If you want to scale by distributing and running tests on several machines and manage multiple environments from a central point, making it easy to run the tests against a vast combination of browsers/OS, then you want to use Selenium Grid.

[READ MORE ▶](#)



PyGame

- Pygame은 비디오 게임을 개발하기 위해 설계된 파이썬 모듈들의 크로스 플랫폼 집합이다. 파이썬 프로그래밍 언어와 함께 사용하도록 설계된 컴퓨터 그래픽스와 사운드 라이브러리들을 포함하고 있다.
- <https://www.pygame.org/>

PyGame

pip install  Projects ▾ News About Getting Started Docs Info ▾ Development ▾

News

[pygame in all the languages — 16 May, 2022](#)

New here?

Learning a programming language can be hard. Learning with materials in a different human language is even harder. This is why we have started the process of converting pygame learning materials into another language. With the help of a professional qualified educator we have begun the process with Spanish. Tutorials, technical API documentation, and teaching materials will need to be translated. Already whilst going through the first tutorials we noticed gaps and problems with our existing materials. It's improving our English materials too! But the first language will be slower because of this, so we don't want to do too many at once. As pygame is a hobby project made by volunteers we don't have a big budget for things, and we don't do corporate sponsors. Costs come out of our pockets, and people work on what they enjoy doing in their spare time. So far one of our contributors has donated \$800 USD, but we are seeking to raise \$1200(€1200) more for the first phase of this en-devour [with a fundraiser](#). If you think it's a worthy cause and you have a few monies to spare we'd appreciate any support.

 **pygame_org** · May 16, 2022 
@pygame_org · [Follow](#)

Learning programming is hard. Learning with tutorials in another human language is even harder.

So... pygame in all the languages! Starting with Spanish.

Raising funds for a qualified educator. Can you help?
(donate/rt)
paypal.com/pools/c/8JPk4t...

#pygame #python

 **pygame_org**
@pygame_org · [Follow](#)

Which language should be next?

Te Reo Māori, New Zealand	13.3%
Ukrainian	66.7%
Quechua	20%

30 votes · Final results
12:32 PM · May 16, 2022 

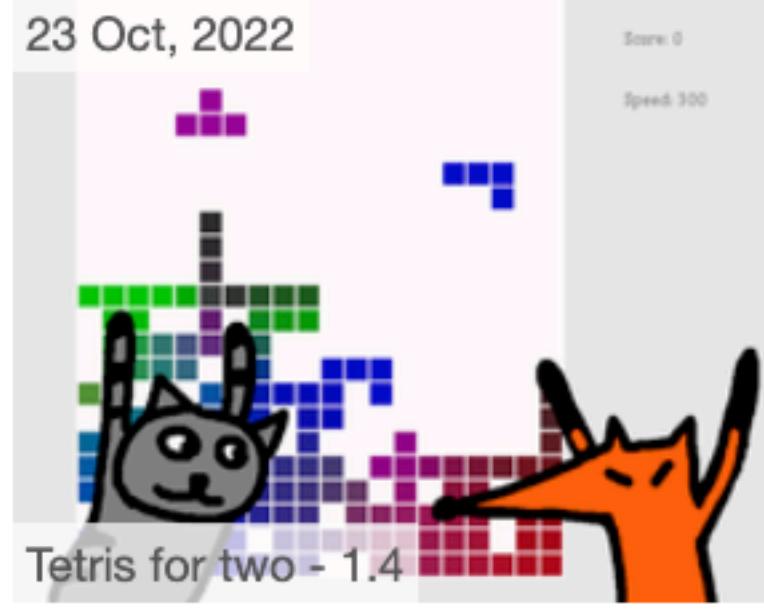
 23  

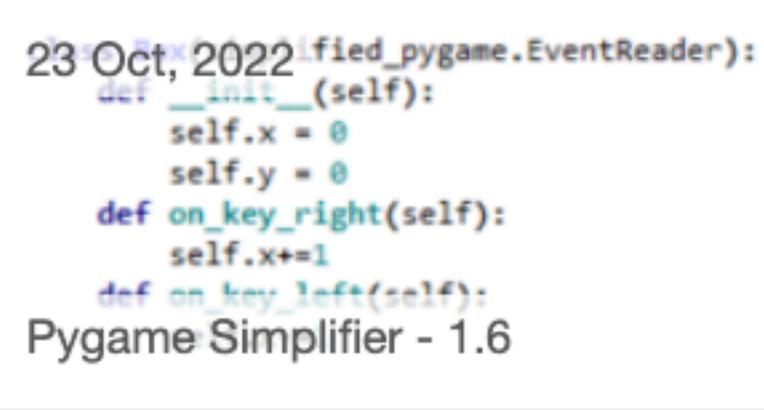
New members signup
Log In

Recent Releases

30 Oct, 2022 
LIT BY TORCHLIGHT
Lit By Torchlight - 1.0

28 Oct, 2022 
Rage of the Blind Witch
Rage of the Blind Witch - 1.0.0

23 Oct, 2022 
Tetris for two
Tetris for two - 1.4

23 Oct, 2022 
Pygame Simplifier
Pygame Simplifier - 1.6

23 Oct, 2022 



- Qt는 컴퓨터 프로그래밍에서 GUI 프로그램 개발에 널리 쓰이는 크로스 플랫폼 프레임워크이다. 서버용 콘솔과 명령 줄 도구와 같은 비GUI 프로그램 개발에도 사용된다. 그래픽 사용자 인터페이스를 사용하는 경우에는 Qt를 위젯 툴킷으로 분류한다. 회사 내부에서는 Qt를 "cute"로 발음하고 있으며 비공식적으로는 "큐티"로 발음한다. Qt는 KDE, Qtopia, OPIE에 이용되고 있다,
- <https://www.qt.io/>

Sign in

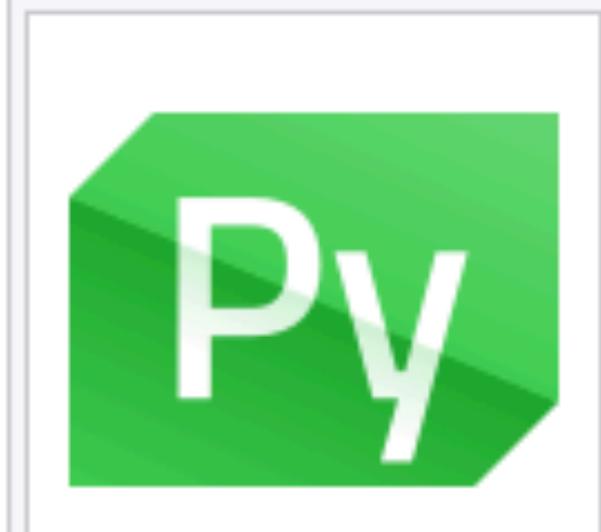
Page Discussion Read View source View history Search Qt Wiki

Qt for Python

Jump to: [navigation](#), [search](#)

En Ar Bg De El Es Fa Fi Fr Hi Hu It Ja Kn Ko Ms Ni Pl Pt Ru Sq Th Tr Uk Zh

Qt for Python



Qt for Python official logo.

The [Qt for Python](#) project aims to provide a complete port of the [PySide](#) module to Qt. The development started on [GitHub](#) in May 2015. The project managed to port PySide to Qt 5.3, 5.4 & 5.5. During April 2016 The Qt Company decided to properly support the port (see [details](#)). The module was released mid June 2018 as a Technical Preview (supporting Qt 5.11), and it was officially released without the Technical Preview tag, in December 2018 for Qt 5.12. In December 2020, the module was released for Qt6, which is the latest available version, which has the following differences:

- It doesn't support Python 2.7,
- Dropped support for Python 3.5, keeping 3.6+ only until PySide 6.3
- PySide 6.4 is the first version that support Python 3.7+

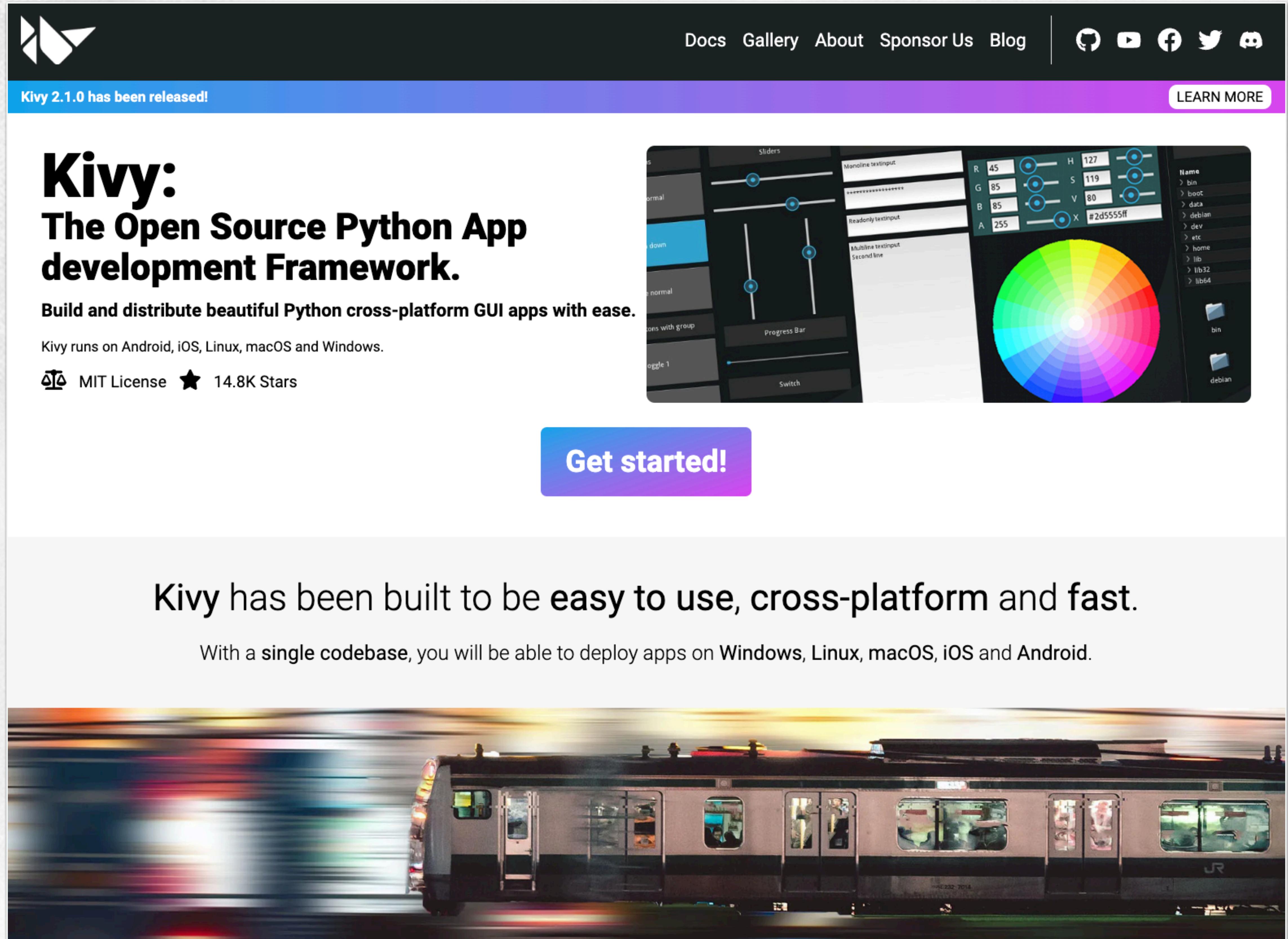
This wiki page tracks the progress of the **Qt for Python** project development and provides further information concerning the effort.

Qt for Python is available under [LGPLv3](#)/[GPLv2](#) and [commercial license](#) for the following platforms:

Contents [hide]

- 1 [Qt for Python](#)
 - 1.1 [What does it look like?](#)
- 2 [Getting Started](#)
- 3 [Community](#)
- 4 [Development Status](#)
- 5 [Contributing to the Qt for Python Wiki](#)

- Kivy 는 NUI(자연 사용자 인터페이스) 를 사용 하여 모바일 앱 및 기타 멀티터치 애플리케이션 소프트웨어 를 개발하기 위한 무료 오픈 소스 Python 프레임워크 입니다. MIT 라이선스에 따라 배포 되며 Android, iOS, Linux, macOS 및 Windows에서 실행할 수 있습니다. Kivy는 Android용 Python, Kivy iOS, 및 모든 플랫폼에서 사용되는 기타 여러 라이브러리 와 함께 Kivy 조직에서 개발한 주요 프레임워크입니다.
- <https://kivy.org/>



The screenshot shows the Kivy website homepage. At the top, there's a navigation bar with links to Docs, Gallery, About, Sponsor Us, and Blog, along with social media icons for GitHub, YouTube, Facebook, Twitter, and Gitter. A blue banner at the top left announces "Kivy 2.1.0 has been released!" and includes a "LEARN MORE" button. The main title "Kivy: The Open Source Python App development Framework." is prominently displayed in large, bold, black font. Below it, a subtitle reads "Build and distribute beautiful Python cross-platform GUI apps with ease." A note states "Kivy runs on Android, iOS, Linux, macOS and Windows." To the right, there's a large image showing various Kivy UI components like Sliders, TextInputs, and a color picker, alongside a file tree view. A purple "Get started!" button is centered below the main title. The bottom section features a blurred image of a high-speed train in motion, symbolizing speed and modernity.

Kivy: The Open Source Python App development Framework.

Build and distribute beautiful Python cross-platform GUI apps with ease.

Kivy runs on Android, iOS, Linux, macOS and Windows.

MIT License ★ 14.8K Stars

Get started!

Kivy has been built to be **easy to use, cross-platform and fast**.

With a **single codebase**, you will be able to deploy apps on Windows, Linux, macOS, iOS and Android.





Thank you