

CURSOS  
INTERSEMESTRALES



PROTECO

# SKLEARN

Inteligencia Artificial

Python 22/01/18



# sklearn

Es un módulo de Python para el “machine learning”, de software libre.

El proyecto fue iniciado en 2007 por David Cournapeau como un proyecto “Google Summer of Code”.

Desde entonces se ha convertido en uno de los módulos preferidos para la implementación de inteligencia artificial.

# ¿Para que sirve?

Cuenta con varios algoritmos de clasificación, regresión y agrupación, incluyendo máquinas de vectores, bosques aleatorios, aumento de gradiente, k-means y DBSCAN, y está diseñado para interoperar con las bibliotecas numéricas y científicas de Python, NumPy y SciPy.



# Machine Learning

Aprendizaje automático o Machine Learning.

Muchos de los servicios que utilizamos en nuestro día a día como google, netflix, spotify o amazon se valen de las herramientas que les brinda el Machine Learning para alcanzar un servicio cada vez más personalizado y lograr así ventajas competitivas sobre sus rivales.

Esta es la implementación de la denominada Inteligencia Artificial



# Machine Learning

Es el diseño y estudio de las herramientas informáticas que utilizan la experiencia pasada para tomar decisiones futuras. Programas que pueden aprenden de los datos. El objetivo es generalizar, o inducir una regla partir de ejemplos donde esa regla es aplicada. Combina conceptos y técnicas de diferentes áreas del conocimiento (matemáticas, estadísticas y las ciencias de la computación)



# ¿Cómo funciona?



Sitio web oficial

<http://scikit-learn.org>


<https://github.com/scikit-learn>



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# Descarga

<http://scikit-learn.org/stable/install.html>



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Please **cite us** if you use the software.

### Installing scikit-learn

Installing the latest release

Third-party Distributions

- Canopy and Anaconda for all supported platforms
- WinPython for Windows

## Installing scikit-learn

**Note:** If you wish to contribute to the project, it's recommended you [install the latest development version](#).

### Installing the latest release

Scikit-learn requires:

- Python ( $\geq 2.7$  or  $\geq 3.3$ ),
- NumPy ( $\geq 1.8.2$ ),
- SciPy ( $\geq 0.13.3$ ).

If you already have a working installation of numpy and scipy, the easiest way to install scikit-learn is using `pip`

```
pip install -U scikit-learn
```

or `conda`:

```
conda install scikit-learn
```

If you have not installed NumPy or SciPy yet, you can also install these using conda or pip. When using pip, please ensure that *binary wheels* are used, and NumPy and SciPy are not recompiled from source, which can happen when using particular configurations of operating system and hardware (such as Linux on a Raspberry Pi). Building numpy and scipy from source can be complex (especially on Windows) and requires careful configuration to ensure that they link against an optimized implementation of linear algebra routines. Instead, use a third-party distribution as described below.

If you must install scikit-learn and its dependencies with pip, you can install it as `scikit-learn[alldeps]`. The most common use case for this is in a `requirements.txt` file used as part of an automated build process for a PaaS application or a Docker image. This option is not intended for manual installation from the command line.

### Third-party Distributions

If you don't already have a python installation with numpy and scipy, we recommend to install either via your package manager or via a python bundle. These come with numpy, scipy, scikit-learn, matplotlib and many other helpful scientific and data processing libraries.

Available options are:



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# Descarga

## Third-party Distributions

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Available options are:

### Canopy and Anaconda for all supported platforms

[Canopy](#) and [Anaconda](#) both ship a recent version of scikit-learn, in addition to a large set of scientific python library for Windows, Mac OSX and Linux.

Anaconda offers scikit-learn as part of its free distribution.

**Warning:** To upgrade or uninstall scikit-learn installed with Anaconda or `conda` you should not use the `pip` command. Instead:

To upgrade `scikit-learn`:

```
conda update scikit-learn
```

To uninstall `scikit-learn`:

```
conda remove scikit-learn
```

Upgrading with `pip install -U scikit-learn` or uninstalling `pip uninstall scikit-learn` is likely fail to properly remove files installed by the `conda` command.

`pip` upgrade and uninstall operations only work on packages installed via `pip install`.

### WinPython for Windows

The [WinPython](#) project distributes scikit-learn as an additional plugin.

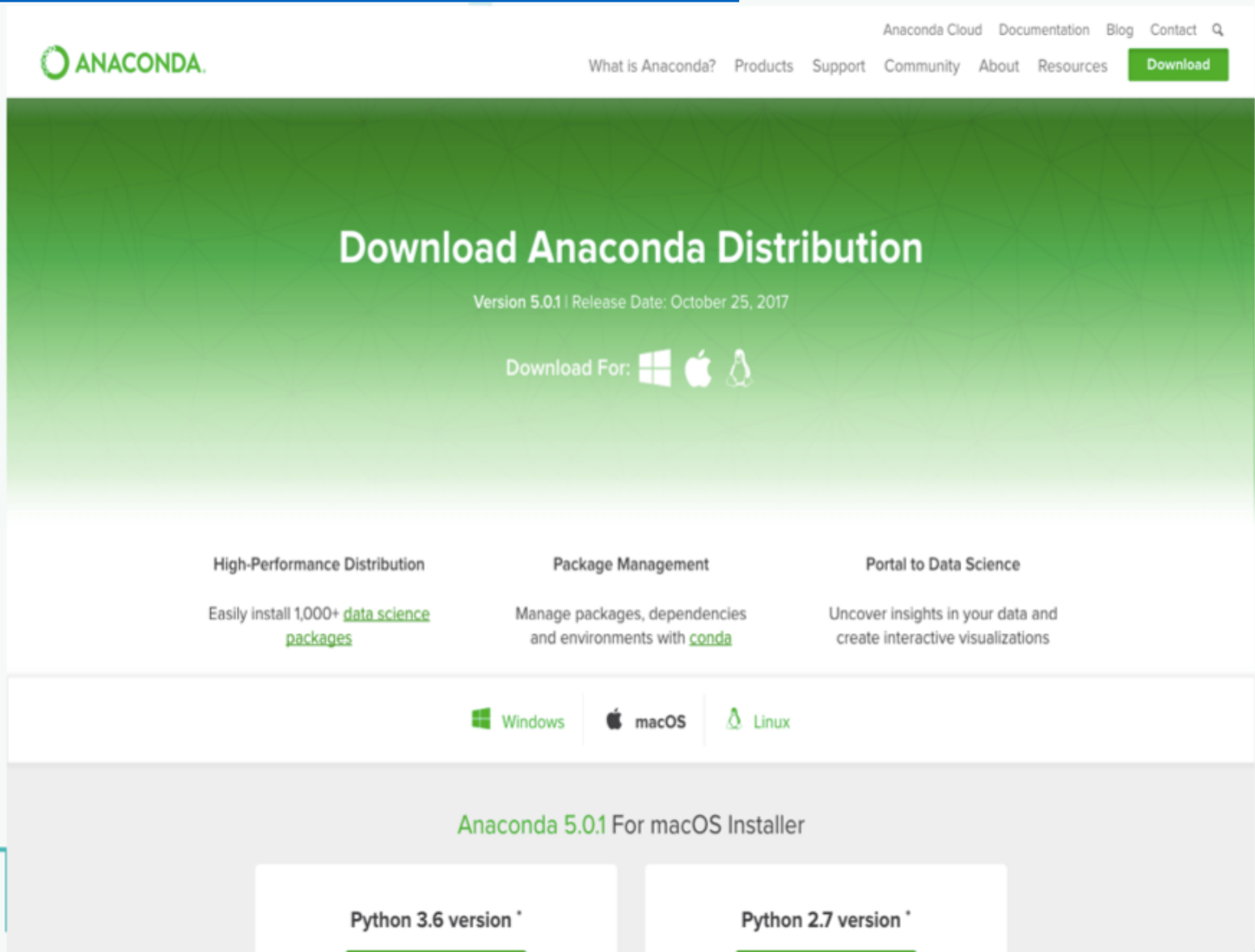
For installation instructions for particular operating systems or for compiling the bleeding edge version, see the [Advanced installation instructions](#).



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# Descarga

<https://www.anaconda.com/download/>



The image shows the Anaconda website's download page. At the top, the Anaconda logo is on the left, and navigation links for 'Anaconda Cloud', 'Documentation', 'Blog', 'Contact', 'What is Anaconda?', 'Products', 'Support', 'Community', 'About', 'Resources', and a 'Download' button are on the right. The main heading is 'Download Anaconda Distribution' with the subtext 'Version 5.0.1 | Release Date: October 25, 2017'. Below this, it says 'Download For:' followed by icons for Windows, macOS, and Linux. Three columns describe the distribution: 'High-Performance Distribution' (easily install 1,000+ data science packages), 'Package Management' (manage packages, dependencies, and environments with conda), and 'Portal to Data Science' (uncover insights in your data and create interactive visualizations). At the bottom, there are links for 'Windows', 'macOS', and 'Linux'. The footer shows 'Anaconda 5.0.1 For macOS Installer' with two buttons: 'Python 3.6 version \*' and 'Python 2.7 version \*'.




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**High-Performance Distribution**




Easily install 1,000+ [data science packages](#)

**Package Management**

Manage packages, dependencies and environments with [conda](#)

**Portal to Data Science**

Uncover insights in your data and create interactive visualizations

 Windows  macOS  Linux

**Anaconda 5.0.1 For macOS Installer**

[Python 3.6 version \\*](#) [Python 2.7 version \\*](#)



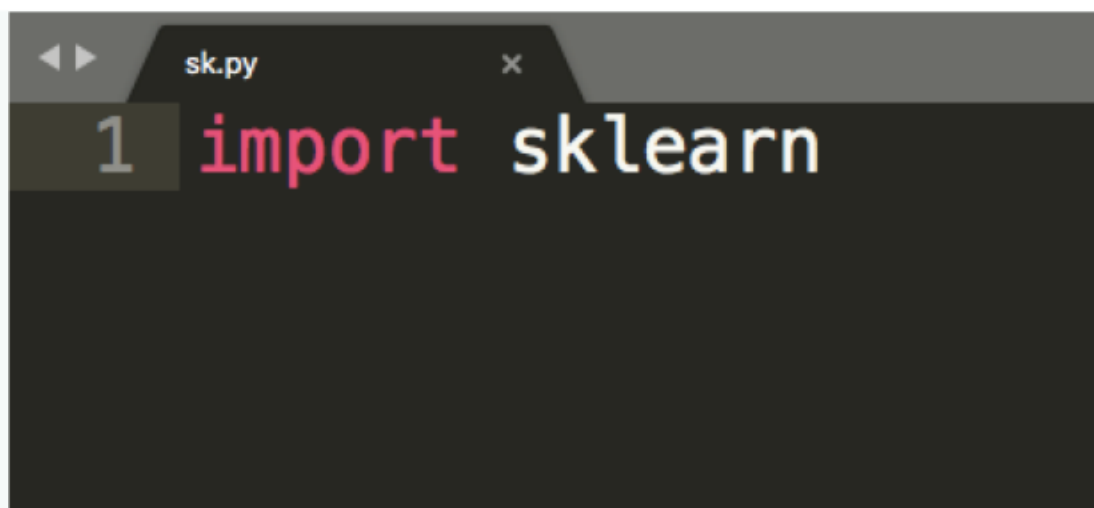
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# Probando que se instalo



sklearn

```
[Julio-Cesar:~ juliocesarmartineztroncoso$ cd Desktop/  
[Julio-Cesar:Desktop juliocesarmartineztroncoso$ python3 sk.py  
Julio-Cesar:Desktop juliocesarmartineztroncoso$
```



```
sk.py  
1 import sklearn
```



# Ejercicio

