



**UAI**

UNIVERSIDAD ADOLFO IBÁÑEZ  
FACULTAD DE INGENIERÍA Y CIENCIAS



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MDS<sup>2019-1</sup> PROCESAMIENTO  
DE IMÁGENES

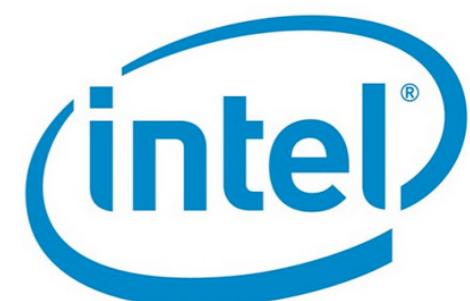
INSTALACIÓN OPENCV

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1 Semestre 2020

- ▶ OpenCV es una librería de visión por computador originalmente diseñada por INTEL en 1999.

## Características

- Escrito en C/ C++ con más de 500 funciones
- Multiplataforma: Windows, Linux, MacOS, Android, IOS
- Libre para desarrollo e investigación



## Funcionalidades

- Análisis de procesamiento de imágenes
- Análisis de estructuras
- Reconocimiento de patrones
- Momentos estadísticos
- Análisis de movimiento y tracking
- Reconstrucción 3D y Calibración
- Adquisición de imágenes e interfaz gráfica

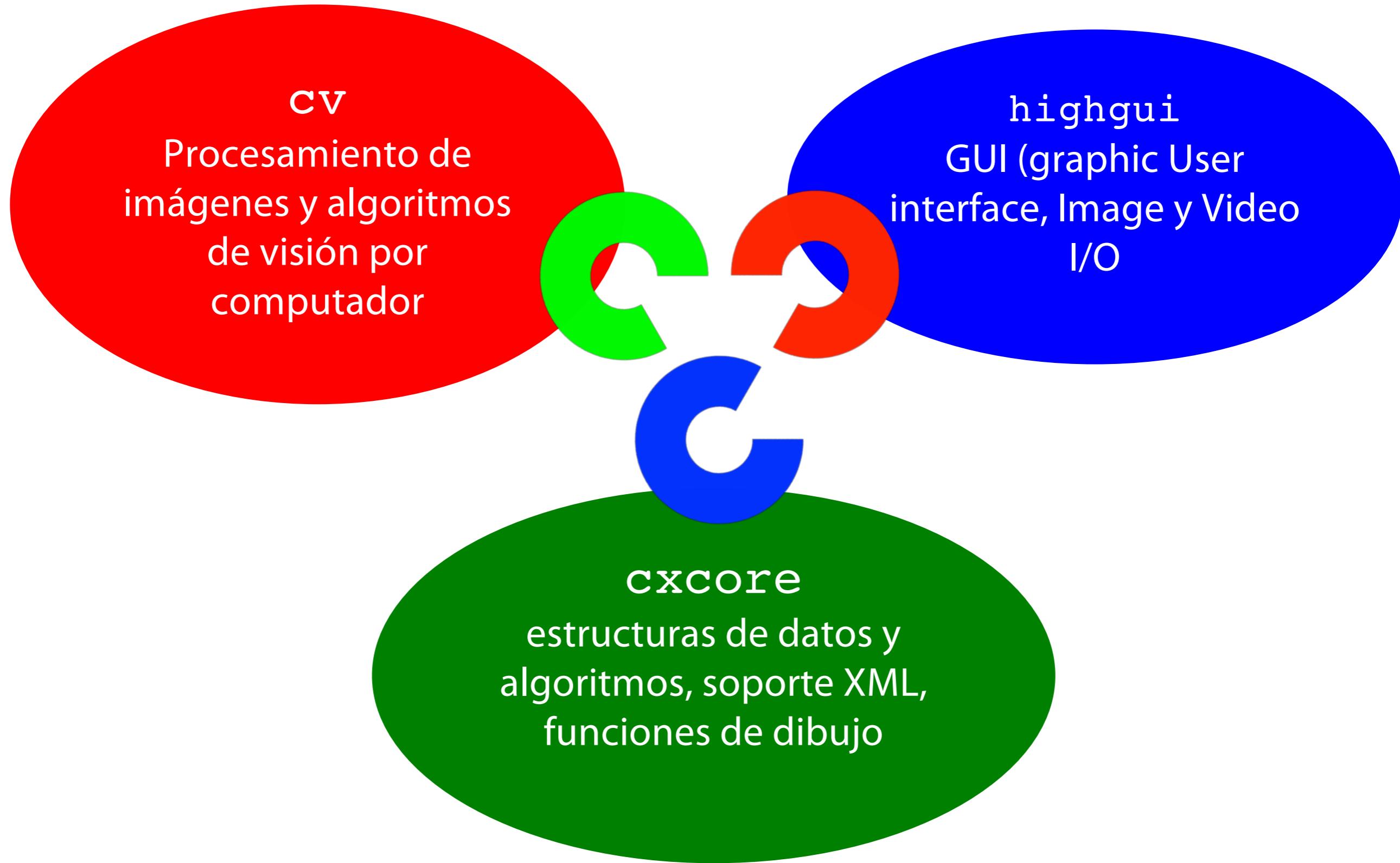


- ▶ OpenCV es una librería de visión por computador originalmente diseñada por INTEL en 1999.

## Algunos usos

- Identificación y reconocimiento de objetos
- Reconocimiento de gestos y caras
- Interfaz humano-computador
- Procesamiento de imágenes
- Robótica
- Tracking
- Vigilancia
- Movimiento de estructuras
- Inspección industrial
- Análisis médico
- Modelación topográfica



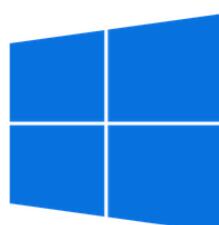


# 1 | Requerimientos previos. Visual Studio Code

## ▶ Descargar e instalar Visual Studio Code

The screenshot shows the official Visual Studio Code download page. At the top, there's a navigation bar with links to 'Visual Studio Code', 'Docs', 'Updates', 'Blog', 'API', 'Extensions', and 'FAQ'. To the right of the navigation bar is a search icon and a large blue 'Download' button. Below the navigation bar, a message says 'Version 1.43 is now available! Read about the new features and fixes from February.' The main section is titled 'Download Visual Studio Code' with the subtitle 'Free and built on open source. Integrated Git, debugging and extensions.' Below this, there are three download sections: one for Windows (Windows 7, 8, 10), one for Linux (.deb for Debian, Ubuntu and .rpm for Red Hat, Fedora, SUSE), and one for Mac (macOS 10.10+). Each section includes a platform logo (Windows logo, Tux logo, Apple logo) and a blue download button.

**Download Visual Studio Code**  
Free and built on open source. Integrated Git, debugging and extensions.

**Windows**  
Windows 7, 8, 10

**.deb**  
Debian, Ubuntu

**.rpm**  
Red Hat, Fedora, SUSE

**Mac**  
macOS 10.10+

User Installer    64 bit    32 bit  
System Installer    64 bit    32 bit  
.zip    64 bit    32 bit

.deb    64 bit  
.rpm    64 bit  
.tar.gz    64 bit

[Snap Store](#)



## 2 | Requerimientos previos PIP en Windows

## ▶ Instalar Python en Windows



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



*Solo realiza este  
paso si tienes  
Windows*

## ▶ Instalar PIP en Windows



Descarga

<https://bootstrap.pypa.io/get-pip.py>

Abre



*abre una ventana  
de comandos*



+



escribe cmd

Ejecuta

python get-pip.py *dentro de la ventana*

## ▶ Instalar OpenCV (en la misma ventana)

Escribe:

pip3 install opencv-python

## 2 | Requerimientos previos Brew (MacOS)

▶ Instalar Brew en **MacOS**Mac<sup>TM</sup> OS

Abre



Terminal.app

Ejecuta:

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```

*copia y pega*

Ejecuta:

```
echo "# Homebrew" >> ~/.bash_profile
echo "export PATH=/usr/local/bin:$PATH" >> ~/.bash_profile
source ~/.bash_profile
```

## ▶ Instalar Python con Brew

Ejecuta

```
brew install python3
```

## 2 | Requerimientos previos. Instalar OpenCV (con PIP)

### ▶ Instalar OpenCV con Brew (Solo MacOS)

Escribe: `brew install opencv`

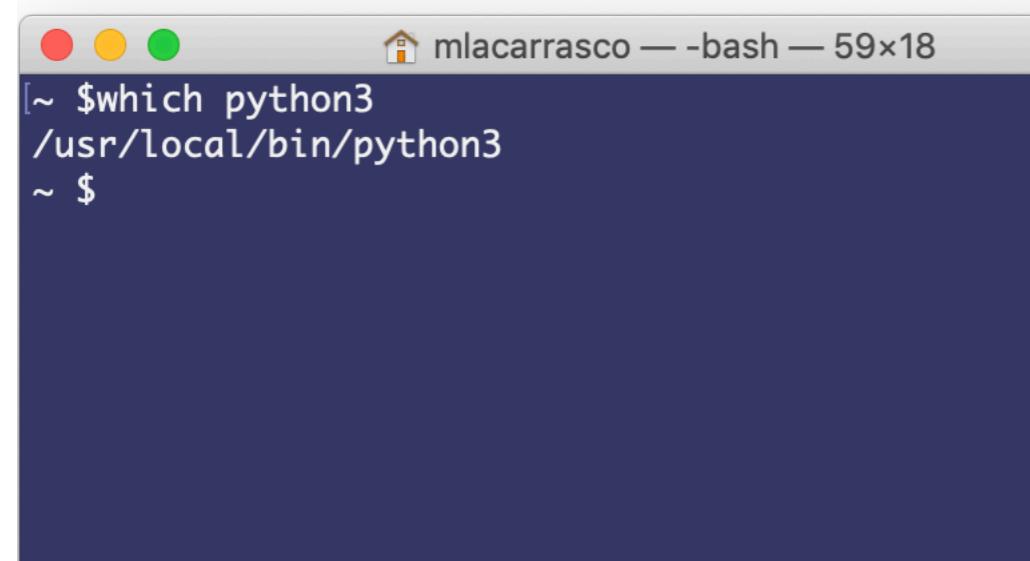


Mac<sup>TM</sup>OS

```
mlacarrasco — bash — 100x34
[~ $brew install opencv
==> Installing dependencies for opencv: cmake, eigen, gflags, glog, metis, gmp, isl, mpfr, libmpc, g
cc, openblas, suite-sparse, ceres-solver, aom, frei0r, libunistring, libidn2, libtasn1, nettle, p11-
kit, libevent, unbound, gnutls, lame, fribidi, pcre, glib, lzo, pixman, cairo, graphite2, icu4c, har
fbuzz, libass, libbluray, libsoxr, libvidstab, libogg, libvorbis, libvpx, opencore-amr, jpeg, little
-cms2, openjpeg, opus, rtmpdump, flac, libsndfile, libsamplerate, rubberband, sdl2, snappy, speex, g
iflib, webp, leptonica, tesseract, theora, x264, x265, xvid, ffmpeg, numpy, ilmbase, openexr, protob
uf and tbb
==> Installing opencv dependency: cmake
==> Downloading https://homebrew.bintray.com/bottles/cmake-3.16.5.mojave.bottle.tar.gz
==> Downloading from https://akamai.bintray.com/b4/b44b7a3e594321bd9492a89ae985390389a35b9e67868bb8c
#####
 100.0%
==> Pouring cmake-3.16.5.mojave.bottle.tar.gz
==> Caveats
Emacs Lisp files have been installed to:
  /usr/local/share/emacs/site-lisp/cmake
==> Summary
🍺 /usr/local/Cellar/cmake/3.16.5: 6,015 files, 56.0MB
==> Installing opencv dependency: eigen
==> Downloading https://homebrew.bintray.com/bottles/eigen-3.3.7.mojave.bottle.tar.gz
==> Downloading from https://akamai.bintray.com/68/683c2dd898245f61c298d1f2675885e7c67ec7e18f6665df1
#####
 100.0%
==> Pouring eigen-3.3.7.mojave.bottle.tar.gz
🍺 /usr/local/Cellar/eigen/3.3.7: 487 files, 6.5MB
==> Installing opencv dependency: gflags
==> Downloading https://homebrew.bintray.com/bottles/gflags-2.2.2.mojave.bottle.1.tar.gz
#####
 100.0%
==> Pouring gflags-2.2.2.mojave.bottle.1.tar.gz
🍺 /usr/local/Cellar/gflags/2.2.2: 24 files, 330.2KB
==> Installing opencv dependency: glog
==> Downloading https://homebrew.bintray.com/bottles/glog-0.4.0.mojave.bottle.tar.gz
#####
 100.0%
==> Pouring glog-0.4.0.mojave.bottle.tar.gz
🍺 /usr/local/Cellar/glog/0.4.0: 19 files, 227.8KB
```

## 3 | Checking de instalación

## ▶ Primero: revisemos si está bien instalado



```
mlacarrasco — bash — 59x18
[~ $which python3
/usr/local/bin/python3
~ $
```

Escribe:

**which python3***debe retornar***/usr/local/bin/python3**

Mac OS

Abre

*una ventana de comandos*

Windows

Escribe:

**python***debe retornar*

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
```

*Si no funciona*<https://www.liquidweb.com/kb/how-to-install-python-on-windows/>

## 3 | Checking de instalación

- ▶ Segundo: Una vez que verificamos que está bien instalado, debemos revisar si OpenCV se encuentra bien instalado

Abre

*una ventana de terminal o comandos*

Escribe:

python3

Escribe:

```
import cv2
print(cv2.__version__)
```

*Una vez abierto Python**debe retornar*

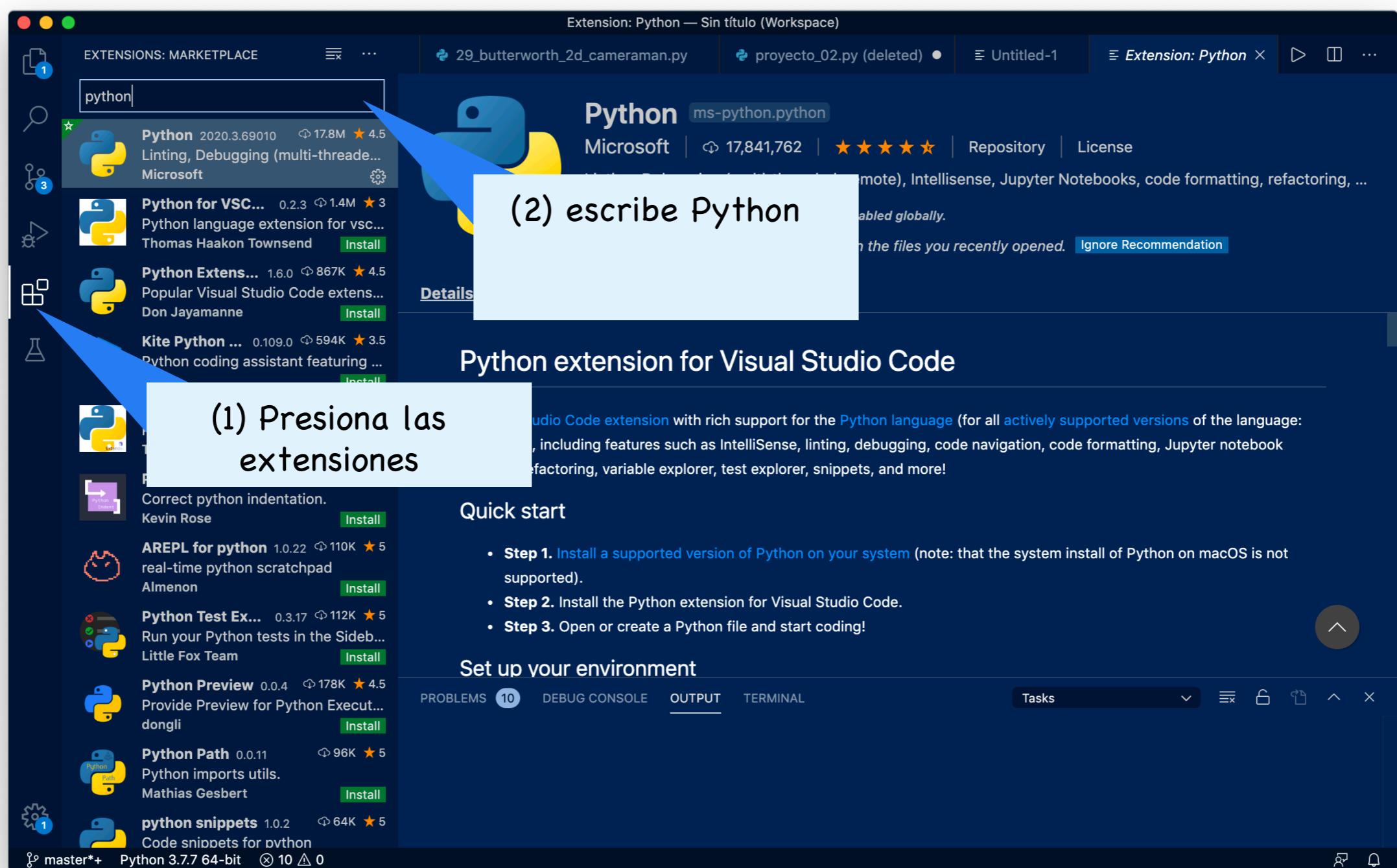
4.2.0

```
Python 3.7.7 (default, Mar 10 2020, 15:43:03)
[Clang 11.0.0 (clang-1100.0.33.17)] on darwin
Type "help", "copyright", "credits" or "license" for
more information.
```

```
>>> import cv2
>>> print(cv2.__version__)
4.2.0
>>>
```

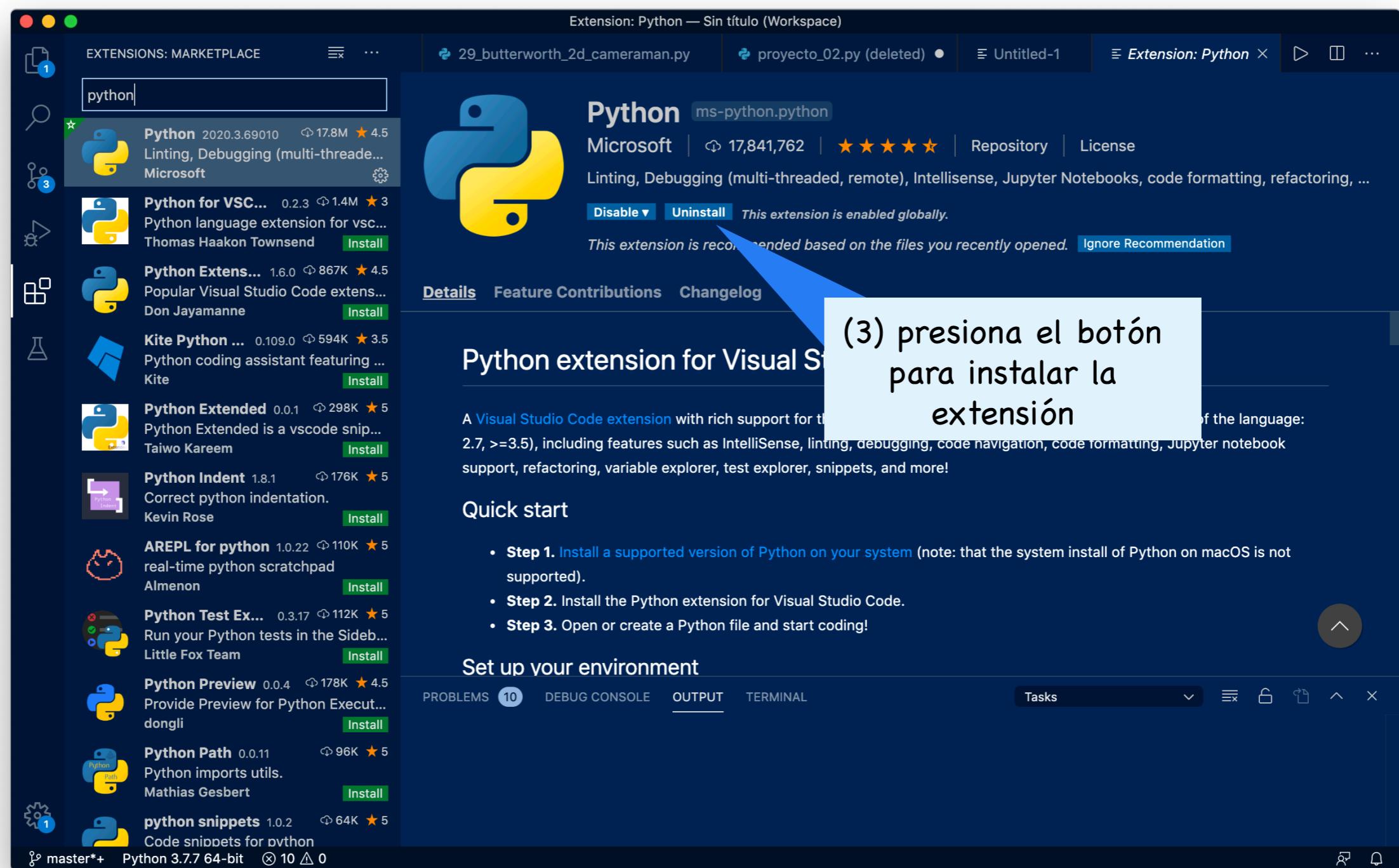
## 4 | Visual Studio Code. Ambiente de trabajo

- ▶ Abre Visual Studio Code y presiona el ícono de extensión y luego escribe Python



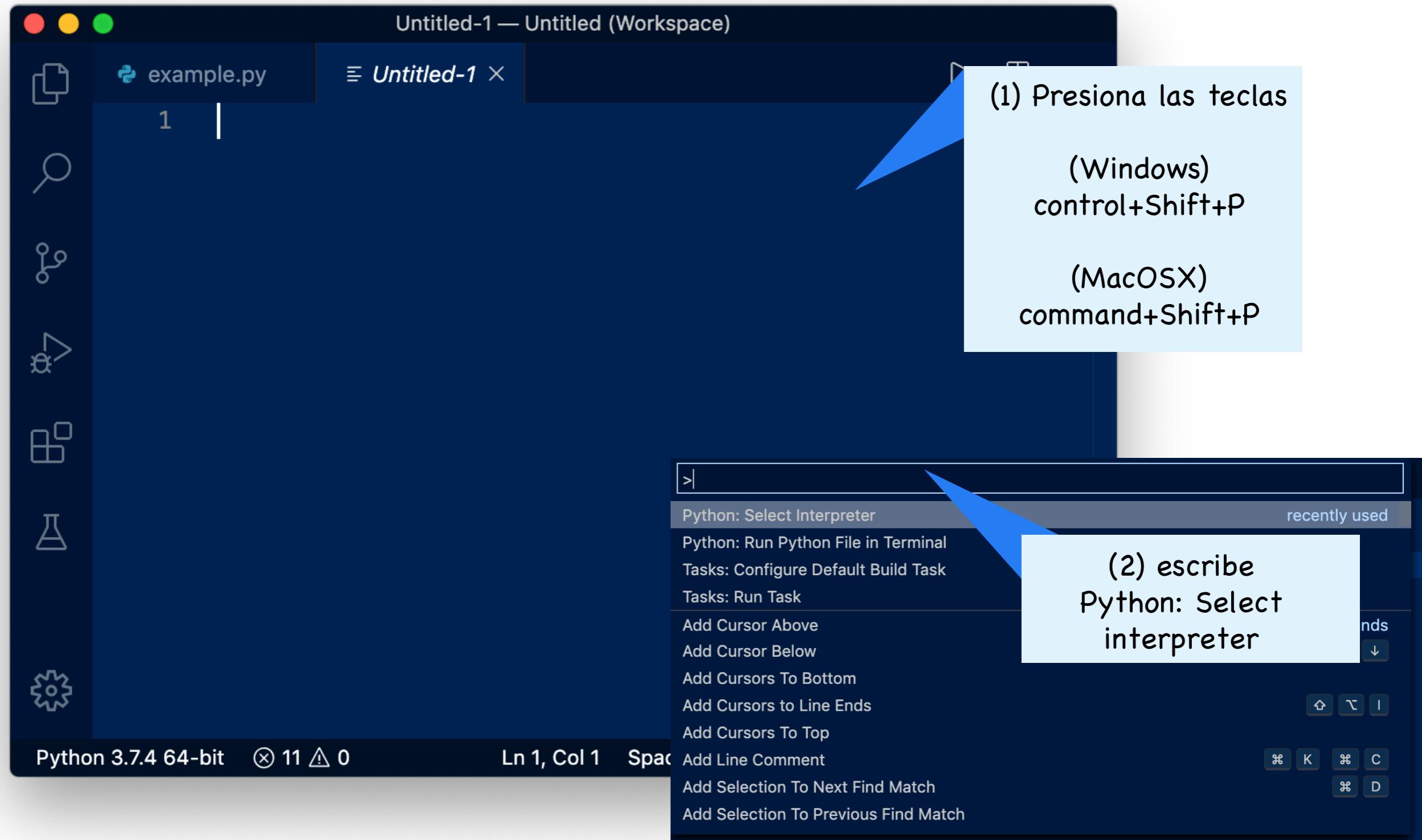
# 4 | Visual Studio Code. Ambiente de trabajo

## ▶ Instala la extensión en el botón install



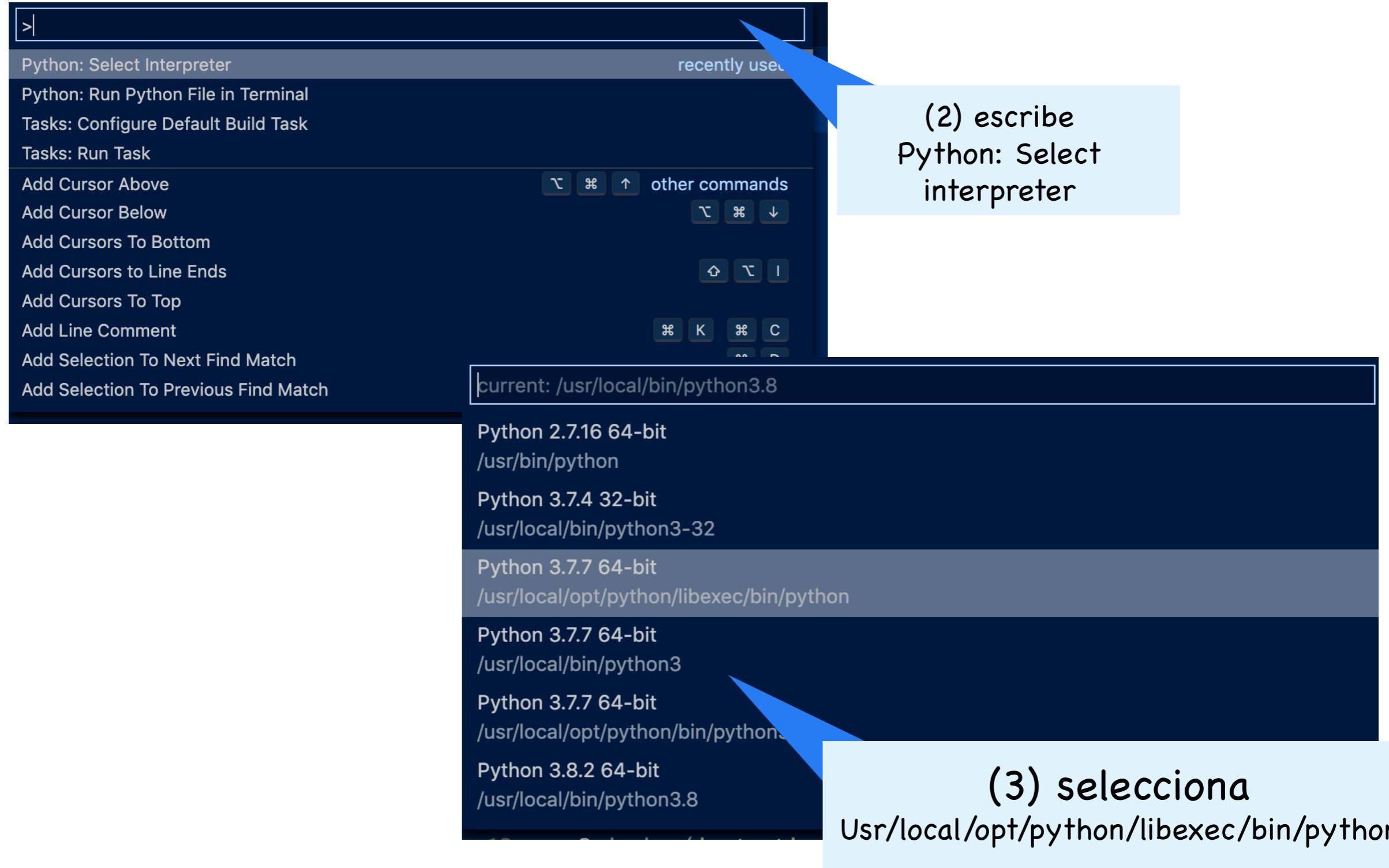
## 4 | Visual Studio Code. Ambiente de trabajo

- ▶ Abrir el editor Visual Studio Code), una vez que esté instalado openCV



## 4 | Visual Studio Code. Ambiente de trabajo

- ▶ Selecciona la versión correcta de Python instalada en tu equipo



<https://code.visualstudio.com/docs/python/environments>

## 4 | Visual Studio Code. Ambiente de trabajo

