

OpenCV Tutorial with Python in VS Code

Prerequisites

- A computer with Windows, macOS, or Linux.
- Basic understanding of Python.
- Visual Studio Code installed (download from code.visualstudio.com).

Setup: Installing Python and OpenCV

1. Installing Python

- **Step 1:** Download Python from python.org. Choose the latest version (e.g., Python 3.11 as of March 2025).
- **Step 2:** Run the installer. Check "Add Python to PATH" during installation.
- **Step 3:** Open your command prompt cmd or terminal:
- **Step 4:** Type `python --version` or `python3 --version` and press Enter

2. Installing OpenCV (cv2)

- **Step 1:** Open VS Code terminal or cmd:
- **Step 2:** Install OpenCV using pip:
- **Step 3:** Type `pip install opencv-python` and press Enter
- **Step 4:** Verify installation:

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

Lesson 1: What Are Images?

- **Explanation:** Images are 2D arrays of pixels. Each pixel has intensity values (e.g., grayscale: 0-255, RGB: three channels).
- **Code:** Display a simple image array.