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Course: 25FA - CSC510 - 1 [Module 1 – Introduction to Computer Vision]

Portfolio Assignment [Installing OpenCV 1 – Brain Image [Display]]

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GIT LINKS

Document Link – [25FC-CSC515-1/MODULE1/csc515-1-module1-portfolio-assignment-aditya-sandhu.docx at main · 65AR645ASAN/25FC-CSC515-1](https://github.com/65AR645ASAN/25FC-CSC515-1/blob/main/MODULE1/csc515-1-module1-portfolio-assignment-aditya-sandhu.docx)

Python File - [25FC-CSC515-1/MODULE1/csc515-1-module1-portfolio-assignment-aditya-sandhu01.py at main · 65AR645ASAN/25FC-CSC515-1](https://github.com/65AR645ASAN/25FC-CSC515-1/blob/main/MODULE1/csc515-1-module1-portfolio-assignment-aditya-sandhu01.py)

This Python program uses the OpenCV library to work with an image of a brain. At the start, it imports two libraries: cv2 (OpenCV) for handling images and os for working with file paths. The script then builds a path to the brain image file stored in the project folder so that it knows where to find the picture.

Next, the program reads the brain image into memory using OpenCV. It checks if the file was successfully opened, and if not, it prints an error message. If the image is loaded correctly, the script displays the picture in a pop-up window with the title “Neural Circuit Illustration.” At this point, the program pauses and waits for the user to press a key before moving on.

Finally, the script creates a new path that points to the user’s Desktop and saves a copy of the brain image there under the name “brain\_copy.jpg.” A message is printed to confirm that the copy was saved. When the user presses any key, the pop-up window closes, and the program ends. This step-by-step process shows how to load, view, and save images using OpenCV in Python.

Python 3.10 is selected for running the program because it is a long-term stable release that is fully supported by scientific libraries such as NumPy and OpenCV. Newer versions like Python 3.13 are very recent, and many packages still provide experimental builds that may cause crashes or compatibility issues. By using Python 3.10, it’s ensured that the virtual environment would run the assignment code reliably without version conflicts.

Steps to run the program –

Create the virtual environment

Navigate to your project folder

Run the cmd in git bash $ cd ~/Desktop/CSUDOCS/CSC515

Create the venv (using Python 3.10)

$ /c/Users/Aditya/AppData/Local/Programs/Python/Python310/python.exe -m venv csc515-venv

Activate the virtual environment

$ source csc515-venv/Scripts/activate

Install dependencies from requirements.txt

Ensure requirements.txt includes

opencv-python==4.8.0.76

numpy==1.26.4

$ pip install -r 25FC-CSC515-1/MODULE1/requirements.txt

Run your script

$ python 25FC-CSC515-1/MODULE1/csc515-1-module1-portfolio-assignment-aditya-sandhu.py

**References**

GeeksforGeeks. (n.d.). *How to install OpenCV for Python in Windows*. GeeksforGeeks. Retrieved September 9, 2025, from <https://www.geeksforgeeks.org/python/how-to-install-opencv-for-python-in-windows/>

OpenCV. (n.d.-a). *Introduction to OpenCV-Python tutorials*. OpenCV Documentation. Retrieved September 9, 2025, from <https://docs.opencv.org/4.x/d0/de3/tutorial_py_intro.html>

OpenCV. (n.d.-b). *Installation in Windows*. OpenCV Documentation. Retrieved September 9, 2025, from <https://docs.opencv.org/4.x/d3/d52/tutorial_windows_install.html>

PyPI. (n.d.). *opencv-python*. Python Package Index. Retrieved September 9, 2025, from <https://pypi.org/project/opencv-python/>

Saptaji. (2025, May 8). *An easy way to install OpenCV on Windows 11 laptop*. Saptaji’s Blog. <https://saptaji.com/2025/05/08/an-easy-way-to-install-opencv-on-windows-11-laptop/>

Stanford Vision Lab. (2017). *CS131 computer vision: Foundations and applications [Course notes]*. Stanford University.