

CPE 442 : Sobel Filter

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Video link

- Video demonstrating the sobel program

Installing/Setting up OpenCV

Installing

- Depending on what operating system you are working on for this part.
- On a terminal type the following:
 - For MacOS: `sudo brew update && sudo brew install pkg-config opencv`
 - For Debian distros: `sudo apt update && sudo apt install -y pkg-config libopencv-dev`
 - For Arch distros: `sudo pacman -Syu pkg-config opencv`
- Above assumes that opencv4 was installed

Setting up OpenCV

- This section is about linking opencv libraries and putting in headers in the c/c++ files

Linking OpenCv libraries to your program

* In your Makefile for the ``C_FLAGS`` add a link to all the opencv libraries:

```
`C_FLAGS+=pkg-config --cflags --libs opencv4`
```

* If you dont want to add all the libraries example:

```
`C_FLAGS+= -I<path to opencv4 folder> -lopencv_<name(s)>`
```

Putting headers in your c/c++ files

* Find the full path to your opencv folder

- * Extract part of the path excluding the path to the opencv4 folder
 - * For an example ``full_path=/usr/include/opencv4/opencv2/imgcodecs.hpp``
 - * In your c/c++ you would include the `opencv2/imgcodecs.hpp` part

Grabbing a frame in OpenCV

Assuming that you are using VideoCapture(vc) to grab a frame. The easiest way to grab a frame from vc is to use the » operator and make sure that the vc object is on the left of that operator and the Matrix(Mat) object is on the right of it. The question now is - how do you know when there are no frames left in vc? This is simple just use the empty() function on that frame.

Displaying a frame in OpenCV

To display a frame is easy in opencv. There is a function called imshow(char , Mat), the *char* parameter is the name of the GUI window that will pop up and the Mat is your frame object. Its good to add a delay after you call this function if your trying to show a video(set of frames). This can be achieved by the waitKey(ms) function, the only parameter is the time till the next frame (depending on your setup).