**Mac Address detector and decoder**

**Goal**

the goal is to allow users to take images of a device with a mac address label on it and recognize that address automatically, we deal with image as input and our output should be the written mac address.

**Method**

**1- detecting labels**

using openCV contours we can detect regions in image that contains barcode labels, we can use this information to rotate images to horizontal view and to crop this particular region (to provide better recognition)

the idea is to use sobel filter to calculate gradients, and since barcode has high frequency then we can detect it easily, of course obvious disadvantageous can be mentioned but this method is simple and fast.

reference can be found in :

https://www.pyimagesearch.com/2014/11/24/detecting-barcodes-images-python-opencv/

**2-decode labels**

**2-1 using zbar**

zbar is library for detecting and decoding barcode, in our test it performed poorly, we may have to tune the parameters to get better results

**2-2 using tessaract OCR**

easy simple to use OCR, not bad results in our tests, simply we get all characters from text then we search for the word “mac” and then we take the next 12 characters as our address.

**Notes**

the code contains functions to process stream (video or live stream) and test function for images in folder.