The American University in Cairo

Department of Computer Science and Engineering

CSCE 4603 – Fundamentals of Computer Vision

Dr. Mohamed Moustafa	Assignment 3 [10%]	Spring 2021

Assignment released April 9th, and due by end of April 23rd

Develop a program in your preferred programming language that can detect the traffic signs, in **red+yellow only**, in images similar to these

- Download the following three zip files (25 images containing approximately 31 red+yellow traffic sings):
  - http://agamenon.tsc.uah.es/Investigacion/gram/data/traffic_signs/Am_Rojo1.zip
  - http://agamenon.tsc.uah.es/Investigacion/gram/data/traffic_signs/Am_Rojo2.zip
  - http://agamenon.tsc.uah.es/Investigacion/gram/data/traffic_signs/Am_Rojo3.zip
- The program output is a bounding box enclosing each detected traffic sign.

You are expected to deliver:

1. source code of your program. You are allowed to use OpenCV (or other helpful ready made libraries). You are free to use Deep learning models as well. **[2%]**
2. report describing your algorithm including snapshots of your output. **[1%]**
3. Your grade will depend on N=T-F, where T is the number of traffic signs you have detected "***successfully***". A successful detection means your box has an intersection over union[1] >= 0.5 relative to the true box. F is the number of ***extra*** false detections you detect in the images **[min(31, max(0,N))/4 %]**
4. you have to use the same code with the same settings for ALL images.

1 https://en.wikipedia.org/wiki/Jaccard_index