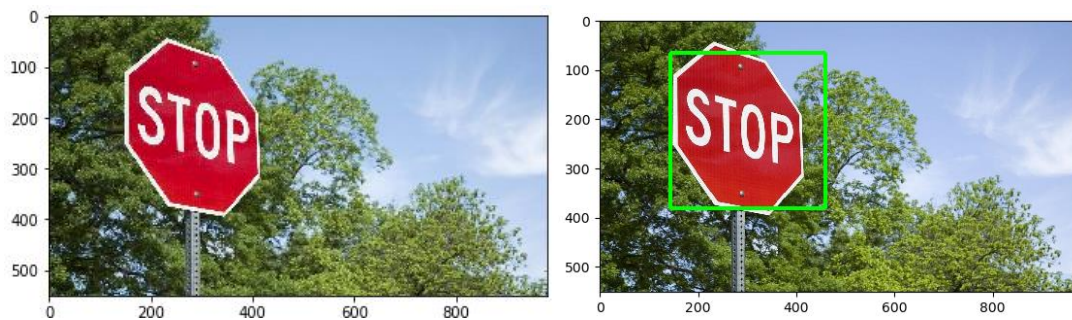


Your task 0 is to build a simple model, which able to detect a traffic sign (stop sign), from the offline video:



#### Hint/ steps could help you :

- 1- Installing Anaconda
- 2- creating conda environment with python 3.7
- 3- Installing OpenCV
- 4- Installing others dependencies (matplotlib , NumPy,...) that will help you in implementation.
- 5- Reading offline video (frame by frame)
- 6- Per-processing capture frame
- 7- Detection & Recognition
- 7.0-Loading CascadeClassifier ('stop\_data.xml')
- 7.1- Detection stop sign and building bounding boxes
- 7.2- save bounding boxes in txt file
- 7.3- send bounding boxes as CAN messages
- 7.4 - visualization the results on screen

#### Input

- stop\_data.xml
- Offline video : „“

#### output

- Bounding boxes on detecting top signs
- Text file for saving the bounding boxes information (file is defined up you txt, json, xml , .....).
- Bounding box example : (x1, y1, width, height) for example(10,15,42,42)
- CAN Message example :
  - o can\_id = 0x018; //CAN id as 0x018
  - o can\_dlc = 8; //CAN data length as 8
  - o canMsg.data[0] = type; //Update Type value in [0]
  - o canMsg.data[1] = x1; //Update X1 Box value in [1]
  - o canMsg.data[2] = y1; //Update Y1 Box value in [2]
  - o canMsg.data[3] = width; //Update width Box value in [3]
  - o canMsg.data[4] = height; //Update height Box value in [4]

- `canMsg.data[5] = 0x00;`
- `canMsg.data[6] = 0x00;`
- `canMsg.data[7] = 0x00;`