CSI4133
Project Part A: Markerless Hand Tracking in Video

Goal:
Tracking markerless hand in a video by using object detection and object tracking.

Idea:
- Load video ("videos-partA.mp4").
- Hand detection:
  - You can use your own preferred object detection methods.
  - I recommend using MediaPipe.
  - Other methods include Haar Cascade, HOG + Linear SVM, YOLO, SSD, Faster R-CNN, etc.
- Hand tracking
  - Highlight the hands being tracked in the videos by encasing them with green rectangles, as shown in Figure 1-(a).
  - Show the movement of the hands (blue or purples lines), as shown in Figure 1-(b).
- Visualize the result. The resulting videos need to be generated and saved.
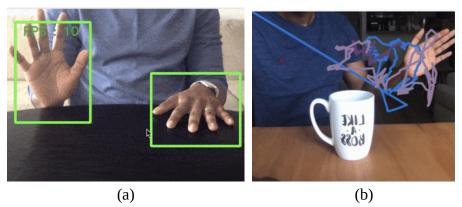

(a)   (b)
Figure 1. Hand Detection and Tracking.

Hints:
1. External source code can be used to complete this project (so long as it is properly referenced).
2. Your solution does not need to track in real-time. But real-time tracking is preferred.

Submission:
1. Lab report.
   i. Describe every step of your method.
   ii. Give detailed explanations for important steps.
2. Python code. If you use external source code, it needs to be properly referenced.
3. Resulting videos.

Due date is November 11th, at 11:59pm