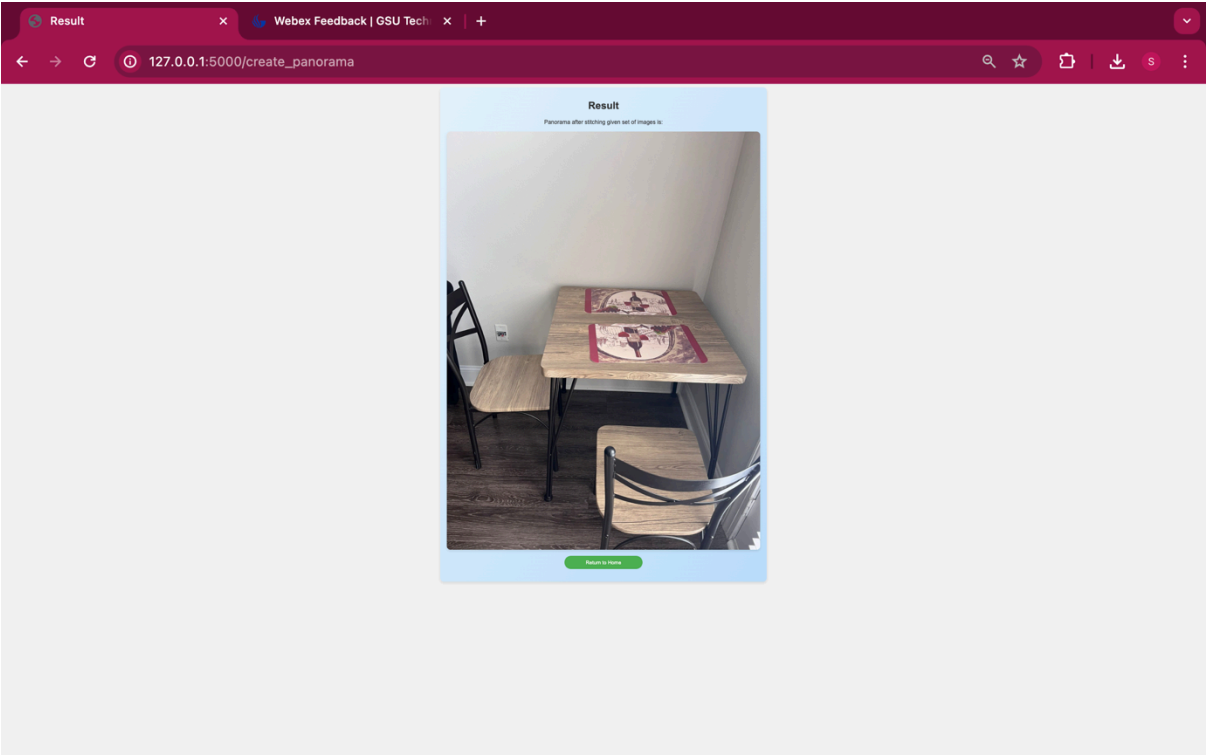


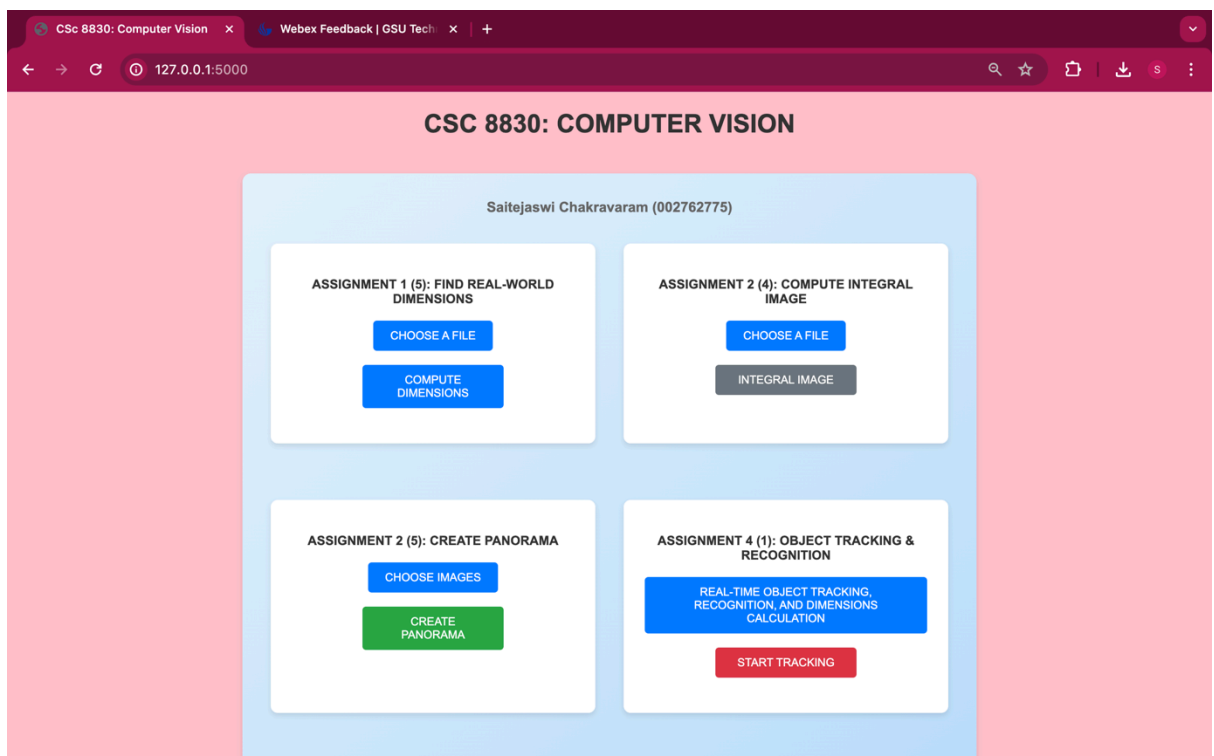
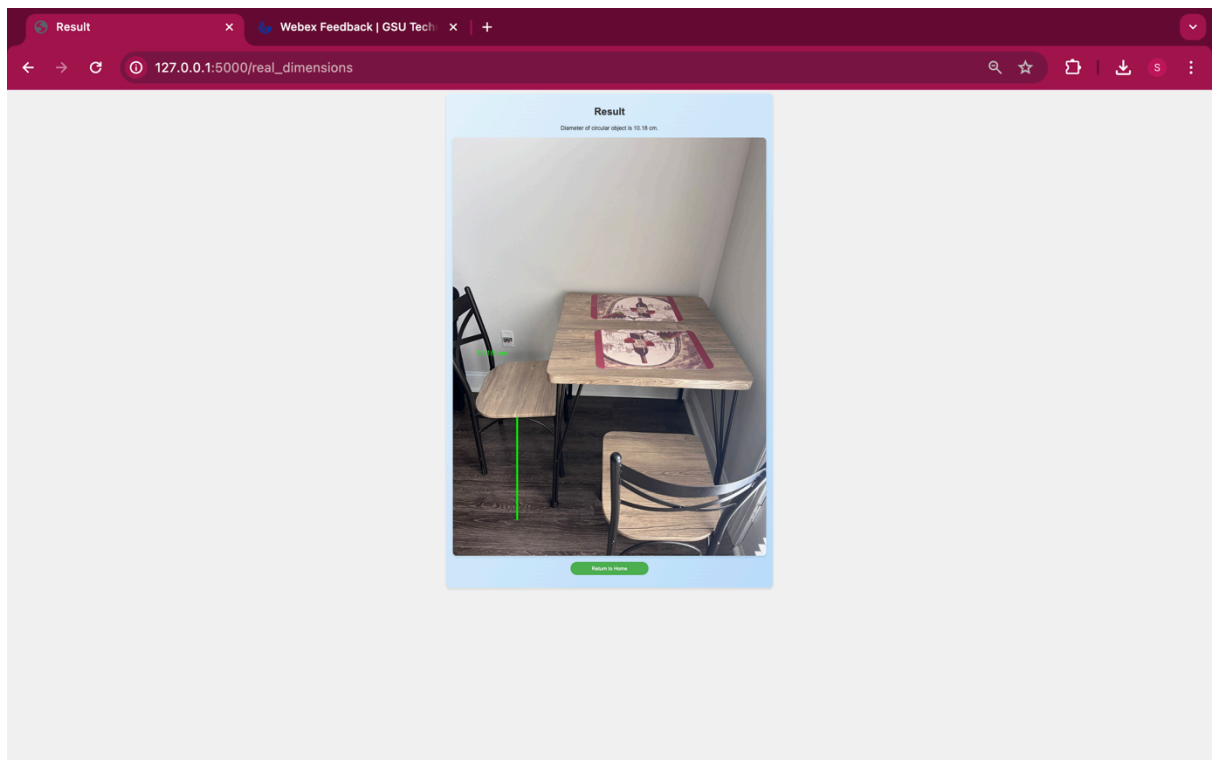
CSC 8830: CV Assignment-3

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1. Implement an application (must run on web or as an app on mobile device) using the stereo camera where it will recognize, track and estimate dimensions (at least 2D) of any object within 3m distance and inside field-of-view to the camera. You can use barcodes or text recognition tools for identification. However, the entire object must be tracked (not just the barcode or text). **Machine/Deep learning tools are NOT allowed.**
 1. Stereo Vision Setup:
 - The DepthAI library, which offers depth information from stereo cameras, is used by the programme to set up stereo depth processing.
 - It sets up a colour camera and two mono cameras (left and right) to take RGB pictures.
 - To create a depth map, stereo depth estimation is carried out utilising the stereo pair.
 2. Object Tracking: Using contour detection and background removal, the application develops an object tracker (ObjTracker) that finds and tracks things.
 - Bounding boxes are drawn around detected objects in the stereo vision stream and they are tracked based on their centroids.
 3. QR Code Detection:
 - OpenCV's QR code detector (cv2.QRCodeDetector()) is used to detect QR codes.
 - Information decoded from detected QR codes is shown on the stereo vision feed, along with an outline of the code.





Github: <https://github.com/05saitejaswi/csc8830>

Recording:

Webex meeting recording: schakravaram1@student.gsu.edu's meeting-20240423 0228-1

Recording link:

<https://gsumeetings.webex.com/gsumeetings/ldr.php?RCID=22659d199efbef8c2d6baf72ec289c8b>

2. Use the DepthAI SDK or use ORB3-Visual SLAM (https://github.com/UZ-SLAMLab/ORB_SLAM3) to execute the scripts on your depth camera and run experiments in two different locations. Provide snapshots of your SLAM output and what limitations/corner cases do you observe.



github repo: <https://github.com/05saitejaswi/csc8830/tree/main/Assignment4>

Recording link:

<https://gsumeetings.webex.com/gsumeetings/ldr.php?RCID=1c82e91b767cf98807a9e91ff0979bb>