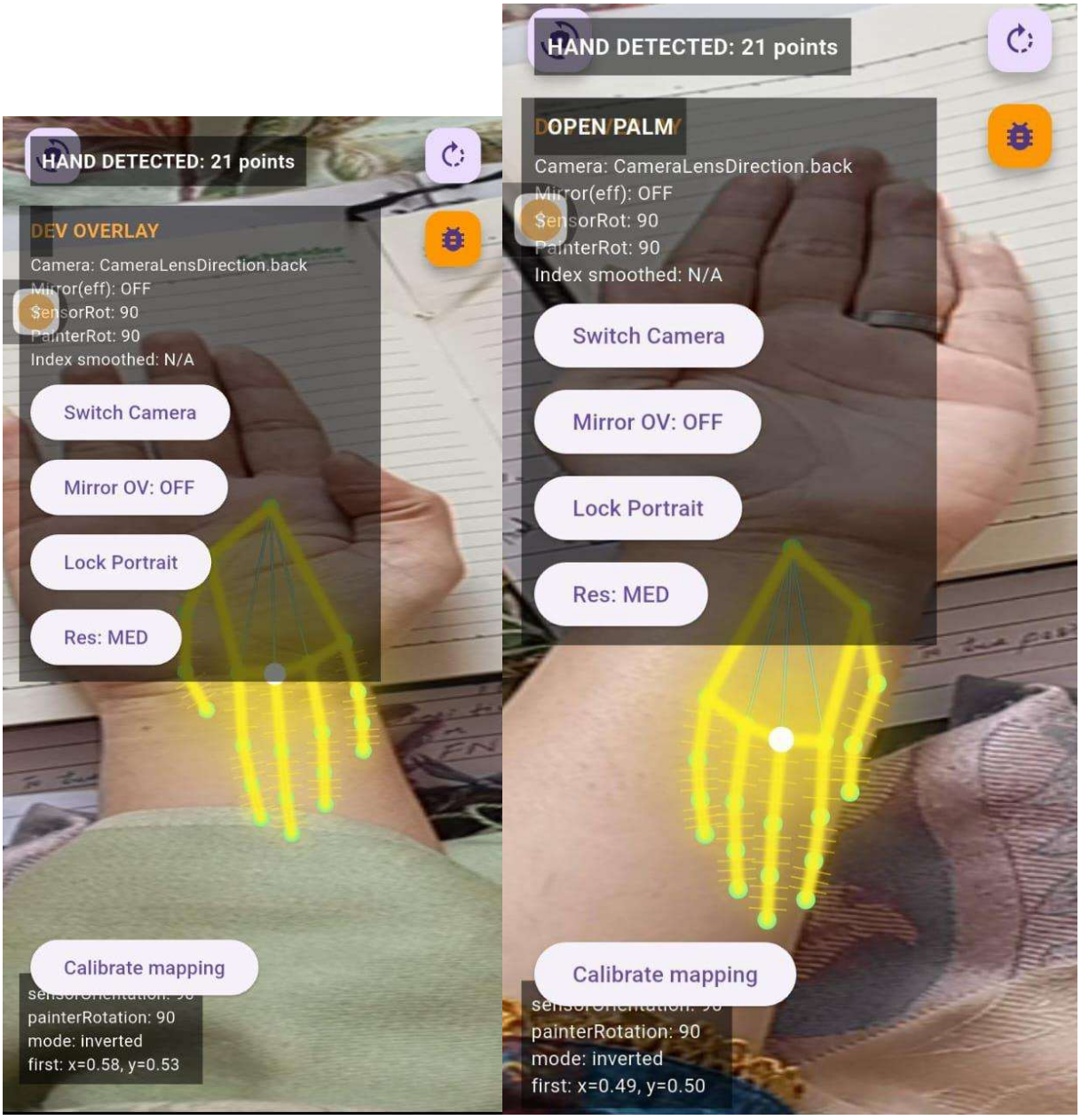
LAB # 13

ML × AR -- GESTURE RECOGNITION

OBJECTIVE:

To understand how Machine Learning models can recognize hand gestures and trigger Augmented. Reality overlays or animations using the Meta Quest Pro and Wizard app.

Screenshots of gestures in Wizard:



- This is an app that detects hands and gestures and assigns red dots to the hand or objects. And this fulfills the requirements of object detection in AR or VR

Summary of AR Response:

In this lab, the AR system responded to hand gestures in real time. When an open hand gesture was shown, a holographic menu appeared. Making a fist gesture closed the menu, and using a pointing gesture showed a virtual arrow that highlighted a nearby 3D object. The AR response was fast and smooth, showing that gestures can be used to control AR features without touching any physical device.

Explanation of How ML Connects to AR Behavior:

Machine Learning is used to recognize hand gestures and connect them to AR actions. The Meta Quest Pro captures hand movements as key points (numbers representing finger and joint positions). The ML model learns these patterns during training. When a gesture is detected, the model predicts which gesture it is and sends this result to the AR system. Based on the prediction, the AR app shows or hides objects. In this way, ML decides the gesture, and AR displays the response.