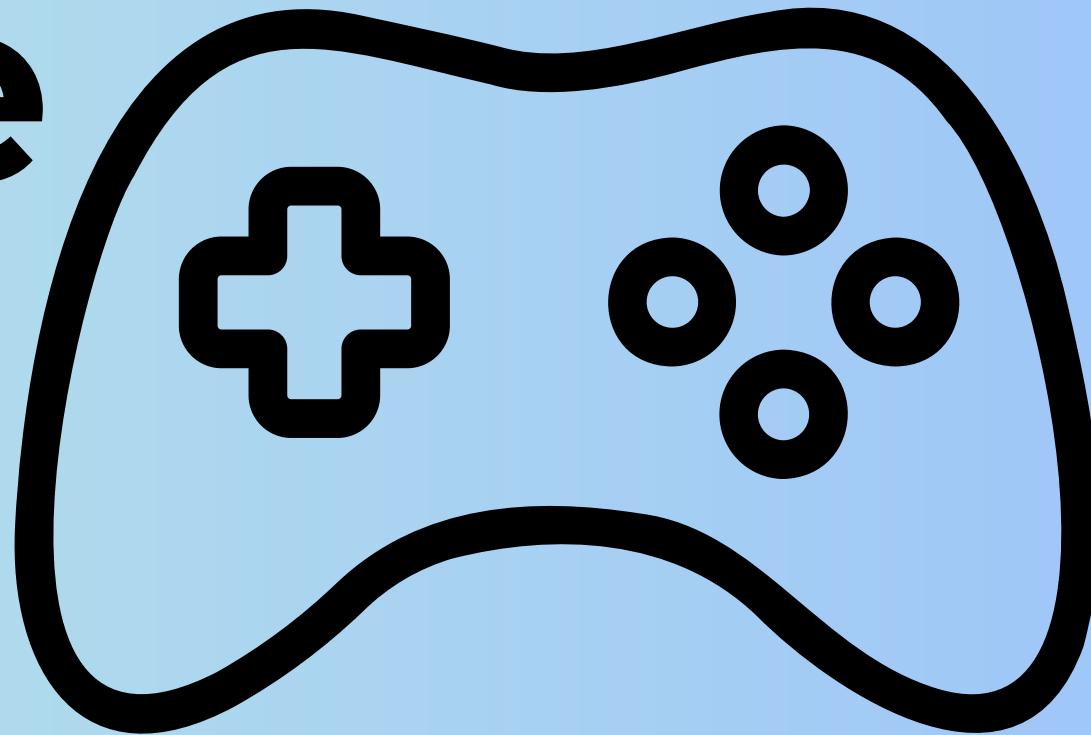


# Game Move Detection

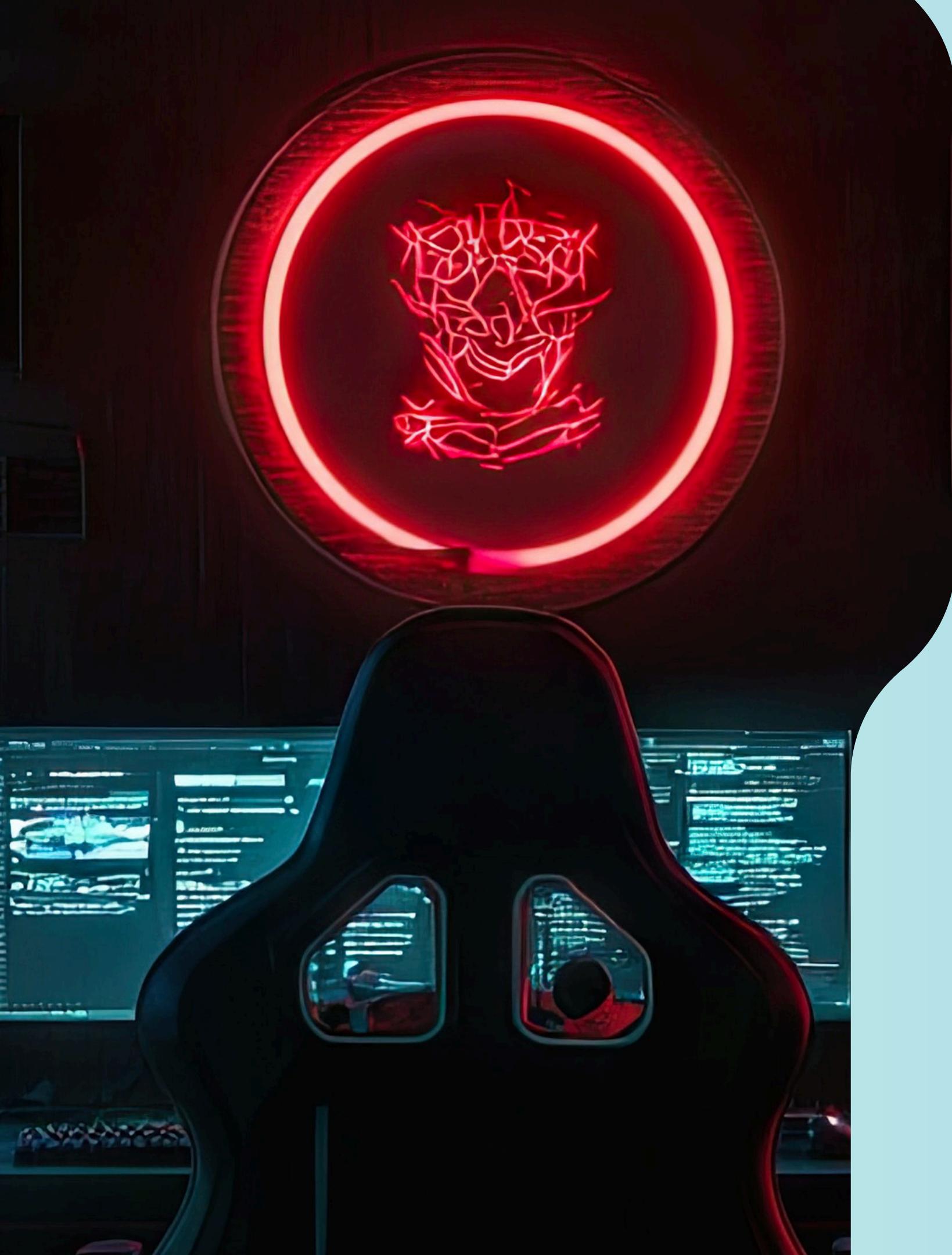


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# INTRODUCTION

Advanced pose detection technology follows the player's movements when he tries to move in front of the webcam and translates them into the corresponding control within the game. The character is able to go left and right across the lanes, jump over obstacles, or slide under barriers. Real-time tracking ensures highly smooth and responsive control, enhancing the gameplay with more immersiveness and interactivity. Moreover, certain gestures are detected by the system-such as joining both hands to start the game or to activate power-ups-to enhance this hands-free control interface. This bases its foundation on natural body motions mapped into virtual in-game actions by way of accurate body landmark detection and gesture recognition.

# LIBRARIES

## OPENCV

Video capture,  
processing, display,  
overlays

## PYAUTOGUI

Simulates  
keypresses, mouse  
clicks

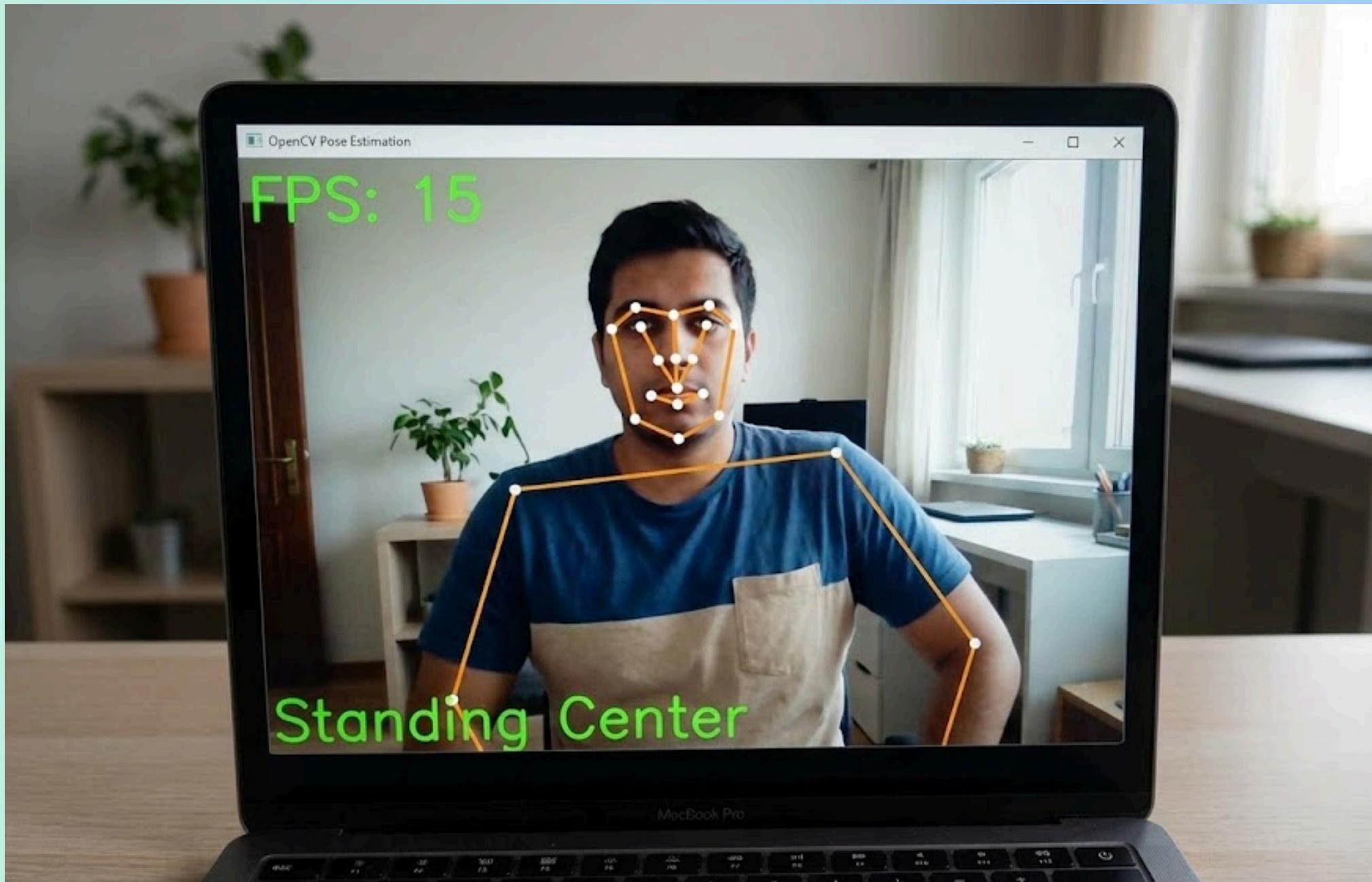
## MEDIAPIPE

Real-time pose, 33  
keypoints

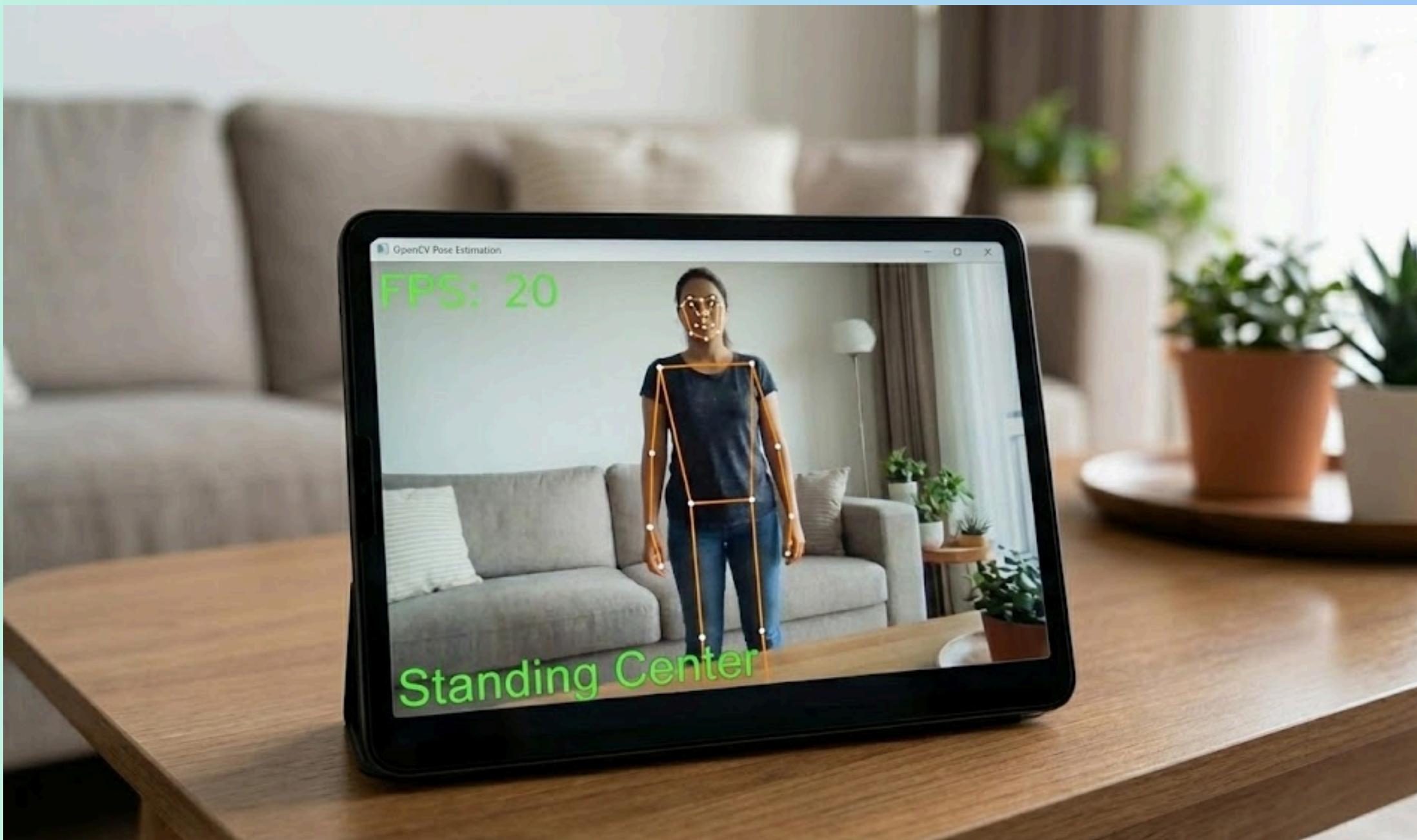
## MATPLOTLIB

Image visualization,  
plotting tool

# PRACTICAL APPLICATION OF THE PROGRAM



# PRACTICAL APPLICATION OF THE PROGRAM



# Future Improvements

**PERFORMANCE: MEDIAPIPE MODEL  
COMPLEXITY 0 CAN TAKE IN 30+ FPS  
INPUT, WITH ADAPTIVE FRAME  
SKIPPING AND MULTI-THREADING TO  
CUT LATENCY BELOW 100MS.**



# Future Improvements

## *Gesture Controls*

**ADD MEDIAPIPE HANDS FOR EASY SWIPES AND FIST CLENCHES—NO MORE DISTANCE MEASURING SMOOTHES HAND MOVEMENTS OVER 5 FRAMES TO ELIMINATE SHAKY DETECTION.**



# CONCLUSION

game move detection using webcam pose detection. Players move left/right by shifting body position, jump/crouch by raising/lowering shoulders, and start actions by joining hands—all tracked in real-time at 30+ FPS.



**THANK YOU**