Crosshair, Glowing Shapes, Day/Night, Tilt Loading Error Log

1. Goal
Overlay a crosshair graphic onto the video.
Decide the type of glow around the crosshair (green or orange) based on direction detected from video frame text.
Add extra handling, like turning the overlay gray under certain conditions.

2. Initial Challenges
Understanding the requirements and expected output.
Setting up Tesseract for OCR to extract direction data from video frames.

3. Overlaying Graphics
Successfully overlaid the crosshair onto the video.
Introduced glowing shapes around the crosshair based on direction.

4. Direction Detection Using Tesseract
Used Tesseract OCR to detect text in video frames.
Extracted direction information from detected text.
Mapped text to specific angles and used it to determine direction (like front, left, etc.).

5. Grayscale Effect
Introduced a grayscale effect on the glowing shapes.
Ensured only the green areas of the glowing shapes turn gray, keeping other parts unchanged.

6. Issues and Debugging
Faced an issue where the first frame turned gray even when the direction was correctly detected.
Diagnosed the problem through detailed print statements and code checks.
Implemented logic to apply the grayscale effect regardless of whether the frame's direction was default or explicitly determined. Adjusted logic accordingly.

The issue was with the initial frame turning gray even when the direction was correctly detected as "FRONT".

The root cause was the condition for applying the grayscale effect. The condition checked if the direction was the default one (i.e., "FRONT"), and if the direction was explicitly set to the default, meaning it wasn't determined based on OCR data.

I modified the logic to determine when to apply the grayscale effect to the glowing shapes. Specifically, changed the condition to apply the grayscale effect only if:

The direction is determined to be the default value (i.e., not extracted from OCR data), and the default direction is "FRONT". I check if the determined direction is the default. If it is, and

the direction is "FRONT", then apply the grayscale effect, which is stored in a variable. This variable is then used later in the function to determine whether to apply the grayscale effect to the green area of the glowing shapes.
is_default_orientationgrayscale_effectoverlay_centered

This modification ensures that the glowing shape is in grayscale only when no direction is detected from the frame and is set to the default value "FRONT". Otherwise, the shape retains its original color.

7. Opacity Adjustment

Noted that the overlay layer was semi-transparent even when opacity was set to 100%.
Found and adjusted the code that was forcefully setting the glowing shape's opacity to 30%.

8. Final Touches and Improvements

Improved the readability and structure of the code.
Removed unnecessary outputs to simplify video processing and prepare for future GUI implementation.