YCCE INNOVATION GALLERY

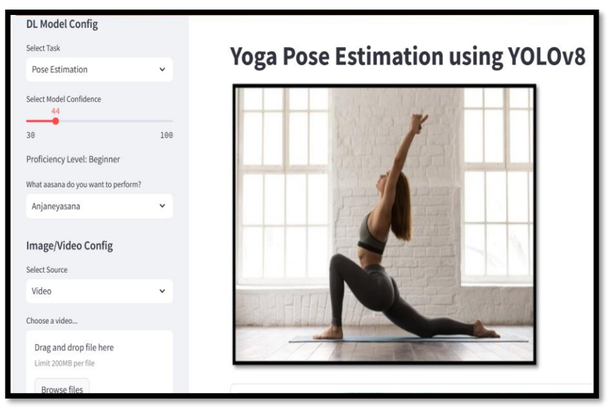
DEPARTMENT OF INFORMATION TECHNOLOGY

Real-time yoga posture detection and correction using yolov8

Preamble

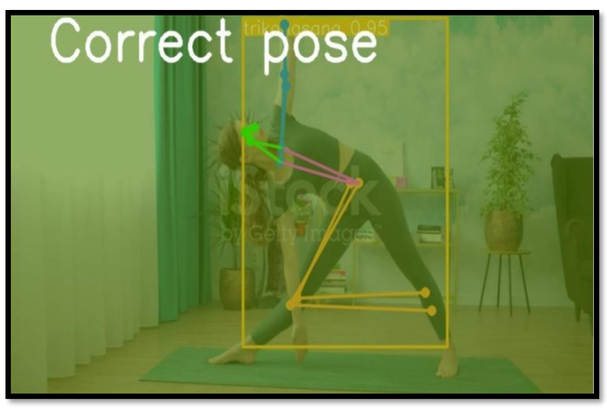
Yoga is a popular form of exercise known for its numerous health benefits, but achieving correct postures can be challenging, especially for beginners. Incorrect postures not only diminish the benefits but also increase the risk of injury. Our solution proposes to integrate YOLO v8 technology, detecting key points of the body during exercise and giving real-time feedback on posture. The system aims to enhance yoga for all levels, making it safer and more accessible without constant instructor supervision. By leveraging technology, we aim to democratize the learning curve of yoga, ensuring practitioners can freely customize their experience. This innovation bridges the gap in traditional learning methods, empowering users to effectively refine their postures. Ultimately, by promoting correct alignment and reducing the risks of injury, our system seeks to encourage widespread participation in yoga consistent with holistic wellness principles for body and mind.

Snapshot

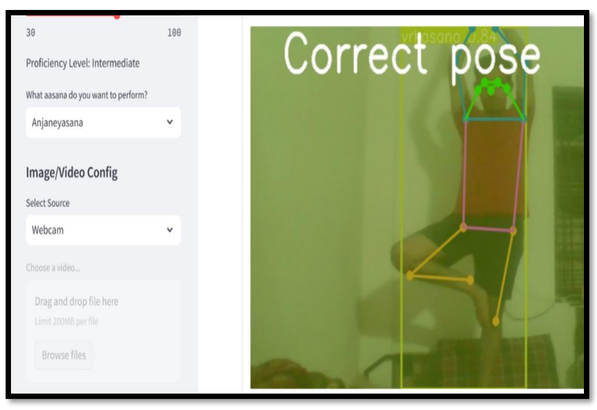


1. User Interface

2. Results obtained on Images After Execution.

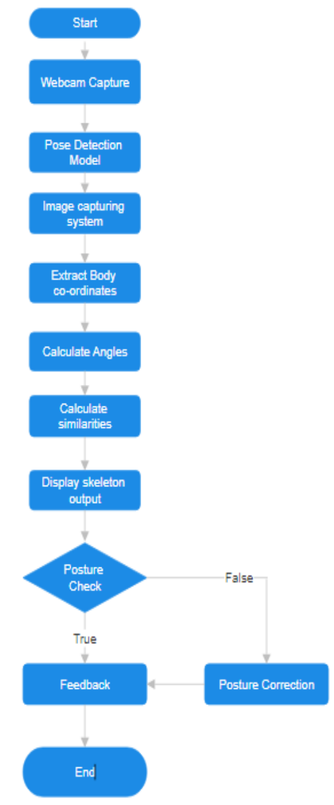


4. Detected Correct pose On Video



3. Detected Correct pose On Webcam

Flowchart of our Project:



Conclusion

This system represented a gesture recognition mechanism which detects the hand gestures from frames extracted from the video provided as input to the system this is done using techniques which includes the frame extraction to eliminate the redundancy of frames and identify the key frames color segmentation for hand detection feature extraction and gesture detection by comparing the real time gesture with the database.

Future scope

Real-time yoga posture detection systems looks promising, with advancements in deep learning for accurate feedback and widespread accessibility through mobile apps and wearable devices.

Bibliography

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