Image Processing

Pose Angle Detection

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Problem Statement

The problem with traditional pose angle detection methods is that they require expensive hardware and specialized training to use. This limits the accessibility of the technology to a small subset of professionals, hindering its potential impact on fields such as physical therapy and sports performance analysis. Additionally, existing solutions often lack the accuracy and reliability needed for precise measurements and analysis.

Design

The Pose Angle Detection System is designed to be highly scalable and flexible, allowing it to be easily integrated into a wide range of applications. The system consists of several key components, including:

- High-resolution cameras for capturing images of the human body.
- Advanced computer vision algorithms for processing and analyzing the images captured by the cameras.
- Machine learning models for accurately detecting and tracking the pose angle of the human body.

Tools Used

1. Python
2. Tensorflow and Keras
3. OpenCV
4. NumPy
5. Matplotlib
6. Scipy
7. Standard Python Library
8. Cython
9. Configobj
10. Github

Code Link and Instructions

Code Link: https://github.com/amanharsh3/Pose-Detection

Execution & Instructions Link:

https://github.com/amanharsh3/Pose-Detection/blob/main/Pose-detection-execution.mp4

Different from Others Solution

Physical Therapy

- Pose angle detection can be used in physical therapy to track a patient's progress and ensure that they are performing exercises correctly. By providing real-time feedback, physical therapists can adjust their treatment plans and ensure that patients are making the most progress possible.

Different from Others Solution

Sports Performance Analysis

- Pose angle detection can also be used in sports performance analysis to track an athlete's movements and provide real-time feedback. This can help athletes improve their technique and prevent injuries. Additionally, pose angle detection can be used to track an athlete's progress over time, allowing coaches and trainers to make data-driven decisions about training and performance.

THE END