

CSE541 Computer Vision

Weekly Report 3

**Landing Error Scoring System for Basketball: A Computer Vision Approach**

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### **Aim:**

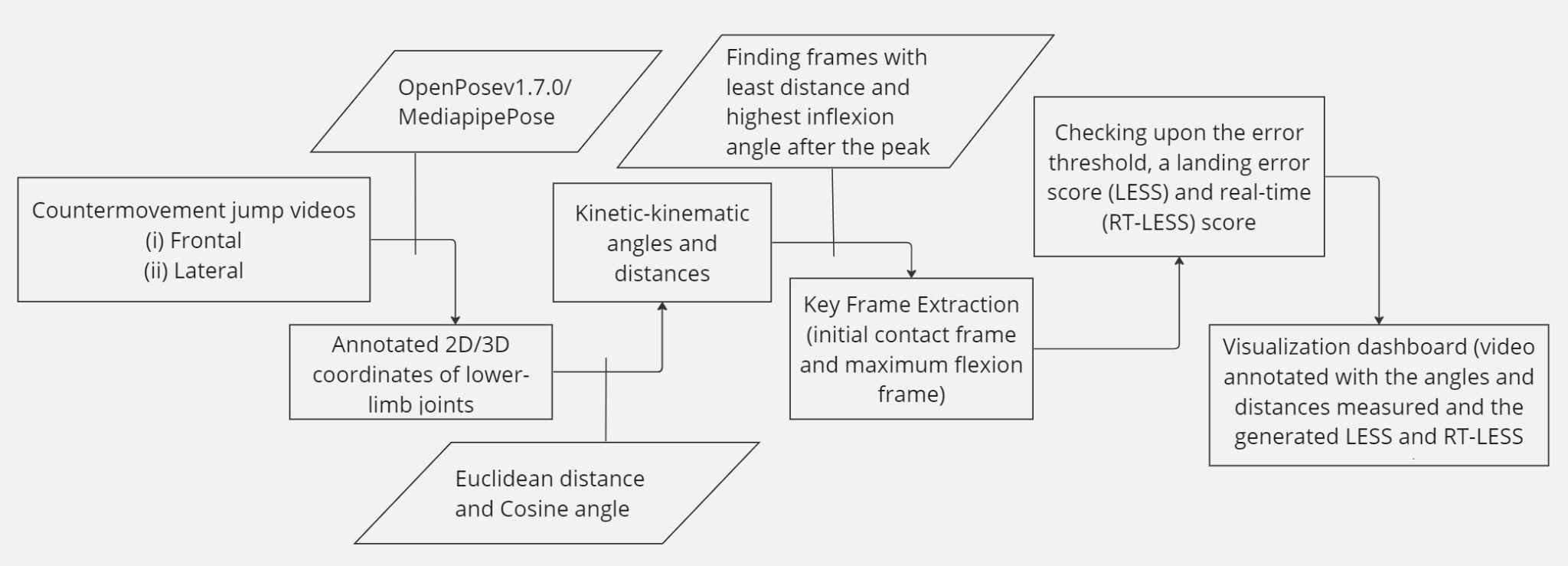
Formulating an Approach for a Landing Error Scoring System for Basketball

### **Introduction:**

In this week's report, our goal has been to use computer vision techniques to formulate an approach for a landing error scoring system (LESS) exclusively for basketball. We carefully designed a processing flow to calculate the landing error score (LESS) and real-time (RT-LESS) score, taking inspiration from the body of current research and base papers. The primary responsibility involved is formulating a thorough methodology utilizing OpenPosev1.7.0 or MediapipPose to annotate frontal and lateral frames.

### **Work Completed:**

* Approach for the landing error score system



Using the base paper and doing the literature review, we made a flow of processing tasks to calculate the landing error score (LESS) and real-time (RT-LESS) score. We understood each of the blocks individually to know what should be done in each step.

The steps to be followed are as follows:

* Annotation on frontal and lateral frames using OpenPosev1.7.0 or MediapipPose.
* Calculate the Euclidean distance and cosine angle
* Keyframe (frames with the least distance and highest inflection angle after the peak) extraction.
* Calculate the LESS and RT-LESS score
* Visualizing using a dashboard

### **Next steps and goals:**

* Find the third jump from the videos and do annotation using Openposev1.7.0 or Mediapipe pose.

### **Conclusion:**

This week's development represents a significant advancement in our effort to create a methodology and flow for basketball landing error scoring system (LESS) using computer vision methods. By carefully designing a processing flow and identifying essential computing jobs, we have prepared the way for developing a comprehensive system that can evaluate landing faults in real-time. In the future, we will concentrate on improving our methodology even more, especially by annotating the third leap in video and carrying out more visualization technique research.

### **References:**

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