**CSE 541 Computer Vision**

**Section 1**

**Group 8**

**Project Number 7: Identification of lower extremity injuries from jump-landings videos: A Deep Learning Approach**

**Weekly Report**

**Week 5**

**Introduction:**

Sports like basketball and football involve rapid high-intensity movements which require high stamina, fitness and flexibility. As a result, there are chances of getting lower extremity injuries due to incorrect posture as a result of altered neuromuscular control while playing. Therefore, early identification of such movements can prevent serious injuries. Our aim is to develop a robust model with a dashboard which helps in identifying such errors in movements.

**Progress Summary:**

We have started exploring annotation tools Kinovea and MediaPipe. However, the challenge is that the videos are titled, and softwares like Kinovea will not work with tilted videos. Further, during our weekly meeting with faculty, we discussed generating 200 frames from the video provided and training the model on these frames. Furthermore, we discussed using two important body landmarks for error detection. These landmarks are lateral flexion, and stance width. Moreover, lateral flexion error is a binary classification error, and stance width is a multiclass classification problem. Also, we plan on developing a dashboard which will input an image and output the image annotated with the error made by the player.

**Next Steps:**

We aim to complete video annotation by next week and thus detect errors based on the angles formed and ratio of stance width of shoulder and ankle keypoints.