ILLEGAL BOWLING ACTION DETECTION IN CRICKET USING POSE ESTIMATION

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Abstract

Illegal0bowling is also known as chucking in cricket is an issue in the game of cricket for a long time. That caused many match-fixing situations in the history of cricket. There are many ways to find illegal bowling action. But all of those systems are using a wearable device while the victim bowls. So it cannot be measured during the match. ICC takes those players into separate sessions and checks whether they are using an illegal action.

The solution the author provided is to use pose estimation on the bowler to detect whether the bowler is using an illegal action or not. For that process, the author is using a slow-motion video feed of the bowler's bowling action and select that in the system. After selecting the video feed the system will go through the video feed and draw the lines on the human body. Then the system will detect the key points of the body and display the angle of the arm. From that, the person who receives the video feed from the system can understand whether the bowler is using an illegal action or not.

When it comes to the evaluation phase the system has been tested by some domain and technical experts. Given the system to some general users regarding the domain to test the system. Got the benchmarking of the complete system. When through a black box testing process as well to test the results of the system. As the future enhancements, the author will be training a model only for the arms with the feeds of arm movements. It will become more accurate.

The prototype system will help to make a huge difference in the sport of the Cricket industry.

Keywords – Cricket, Illegal Bowling Action, Chucking, Pose estimation, Machine Learning, Mediapipe