Centre for Data Modelling, Analytics a
Visualization
(C-MANAV)

Project Title: Dynamically creating and shifting the guidelines for wide deliveries in cricket

Abstract:

- A Guideline is drawn on the pitch which indicates the widest ball the bowler can bowl without incurring a penalty. The umpire can usually decide whether a delivery is a wide ball according to where the ball passes through with respect to the guideline. However, if the batsman moves across the crease in order to create different angles to play his shot, then the guideline must also dynamically move across by the same amount of distance the batsman moves.

- This happens a lot in modern day cricket with many batsmen playing 360-degree shots. The umpire must then judge where the new guideline would be based on an approximate assumption of how much the batsman shifted from his original position. This leads to ambiguity in the wide-ball decisions as the umpire cannot make an accurate assumption on where the new guideline is present.

- Therefore, through this project, we aim to use technology to dynamically create and shift the guideline for wide deliveries based on the batsman's position at the time of ball release. By making this an automated process, the ambiguity in the wide-ball decisions can be removed completely.

Sl. No.	Name	SRN	Individual Contribution
1	Varun C	PES2UG21CS593	Creating Video data sets, Creating 3D model of the pitch and guidelines, Video Object detection using Yolo. Tools – OpenCV, Python, VPython
2	Varun Kamath	PES2UG21CS594	Video editing and syncing of multiple camera angles, Mapping batsman's movements in 2D video coordinates to 3D model Tools – OpenCV, Mediapipe, Python
3	Vikas Paul Menezes	PES2UG21CS606	Ball tracking, Batsman movement detection using pose estimation and modelling. Tools – Python, OpenCV, Mediapipe
4	Vishal M Godi	PES2UG21CS607	Creating Video data sets, Shifting the guideline in 3D Model, Video Object detection using Yolo. Tools – OpenCV, Python, VPython

Faculty Mentor: Dr. Sandesh B J