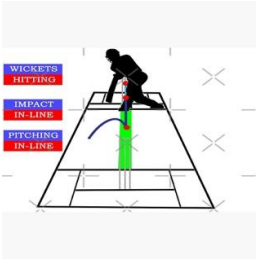
Project Abstract

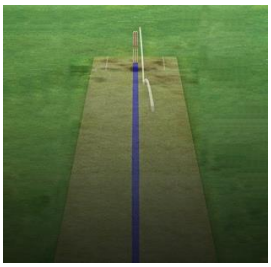
OBJECTIVE

Determine the feasibility to develop a mobile application for real time ball tracking and the display of analytical data for LBW [DRS] detection or self-evaluation through device camera for grassroots Cricket enthusiasts.

Real-time ball tracking using the device camera.



LBW detection using (DRS) principles.



Analytical data display (speed, trajectory, angle)

DEVELOPMENT

Goal is to demonstrate the development roadmap to build an application that can accurately track the ball's trajectory and offer users valuable performance insights and real-time feedback. This involves selection of technology stack and development environment to implementing computer vision algorithms. Some of the steps are:

- Set up node.js for data processing and storage and SQLite for storing user data.
- Include the integration of OpenCV for object detection and tracking.
- Performance metrics calculations such as ball speed, trajectory angle, and impact location.
- Ball trajectory and impact analysis to determine if the ball's predicted trajectory would hit the stumps.
- Train a ML model or use a pre trained ML models to detect the cricket ball in video frames and deploy TensorFlow Lite for on-device machine learning capabilities.
- Optimize code for performance accuracy, battery, and resource efficiency.

In conclusion, this report is to a carry comprehensive feasibility study with market research, financial estimate, and technological feasibility to develop a sophisticated mobile application for real-time ball tracking.