

# Cricket: Front Foot Overstep No-Ball Detection by using IoT

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**Abstract:** Cricket is a one of the popular games in the World. In the Cricket Match different technologies are being used to help the match umpires to take decisions. Often due to the human perception whether a bowled delivery is a no-ball or legal ball which causes disputation. One single ball can change the fate of the Match, so it's obvious to make accurate decision regarding no ball. In Existing approach to detect foot overstep no ball in cricket match; we have used image subtraction method which does not include sensors in cricket field. So, distraction will not be created for players. In the Proposed work we use Metal in the Bowler's shoe (Customized in heal part) to detect the Front Foot No-Ball While the Bowler can Bowl the Overstepped Delivery. It means the Front foot is stepped Over the Popping crease. In this System sensor (Proximity Sensor) can detect the Overstepping Delivery and Sends the alert Message to the Umpire after that he Signals it as a No-Ball

**Keywords:** Cricket; no-ball; popping crease; Proximity Sensor; Customized Shoe.

## I. INTRODUCTION

Cricket is a national game of England. But it is Famous in all over the world. In India cricket is famous because of some Domestic leagues like IPL, TNPL. The cricket was played between two teams. In each team consist of 11 players on the field and 3 substitute players in pavilion. The purpose of the game is to score more runs than the opponent team. The cricket match is divided into two innings. Both the Captains are asked to toss before the match is going to Start. After the toss, two batsman from the bating team and eleven players from the bowling team are in the ground. Remaining bating team members are seated in the pavilion. In cricket, there are some technic is used to decide the run out and edge detections, but one of the Major problems was Detecting the front foot 'No-ball' in recent Matches had as many no balls are unnoticed. By the on-field umpires, they have a lot to keep their eye on including something as intricate as field placement different technologies are being used to help the match umpires to make decision. Often due to the human perception, deciding whether a bowled delivery is a no-ball or legal ball which causes disputation.

## II. EXISTING SYSTEM

In Existing System, the image subtraction technique is used to analyze the video data to detect the overstep no ball. In that System 3rd Umpire can check the Video footage of the previous ball to make Decision Whether it is a NO-Ball or Legal Ball as in Figure 1 and 2.

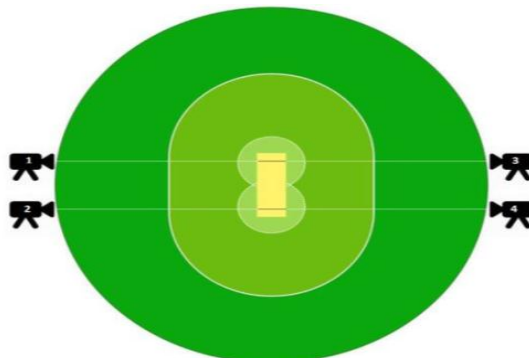


Fig 1 Cameras used for Existing work

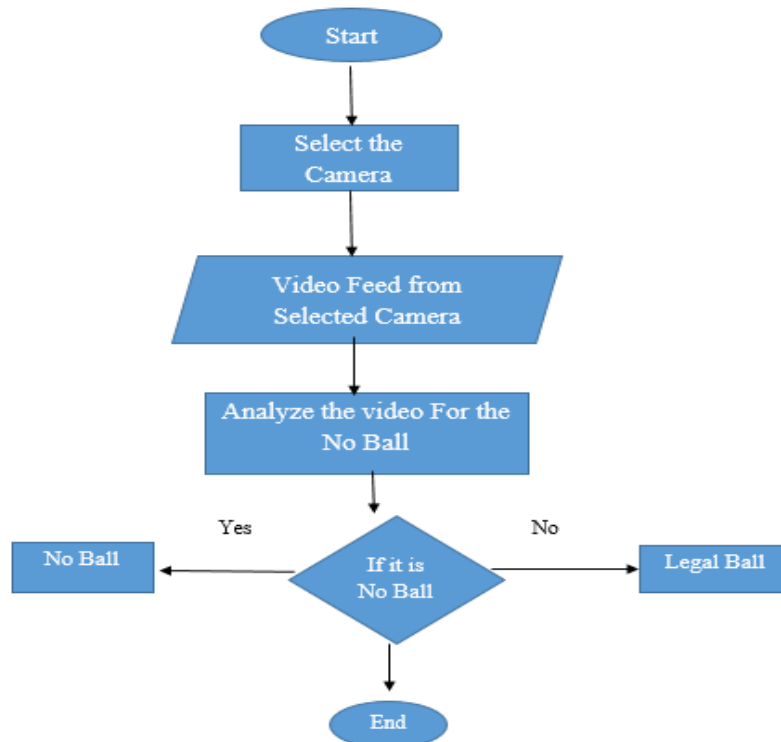


Fig 2 Existing work flow

**III. PROPOSED SYSTEM**

We use Metal in the Bowler’s shoe (In heal part of the Shoe) to detect the Front Foot No-Ball While the Bowler can Bowl the Overstepped Delivery. Front foot is stepped Over the Popping crease. In this System sensor (Proximity Sensor) can detect the Overstepping Delivery and Sends the alert Message to the Umpire after that he Signals it as a No-Ball and also in the Screen It Display the No ball message as in Figure 3.

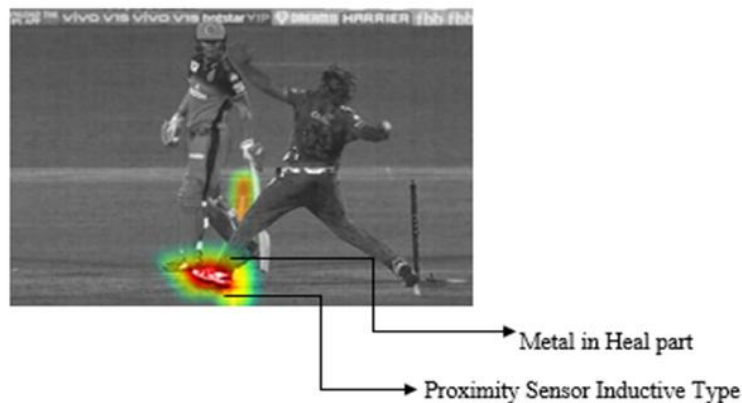


Fig 3 Proposed work

**IV. COMPONENTS REQUIRED**

- Arduino Uno and Bread Board
- Proximity sensor (Inductive type)
- WI-FI Module
- Jumper Wires
- Customized Shoe (Metal in Heal Part Of the shoe)

**V. BLOCK DIAGRAM**

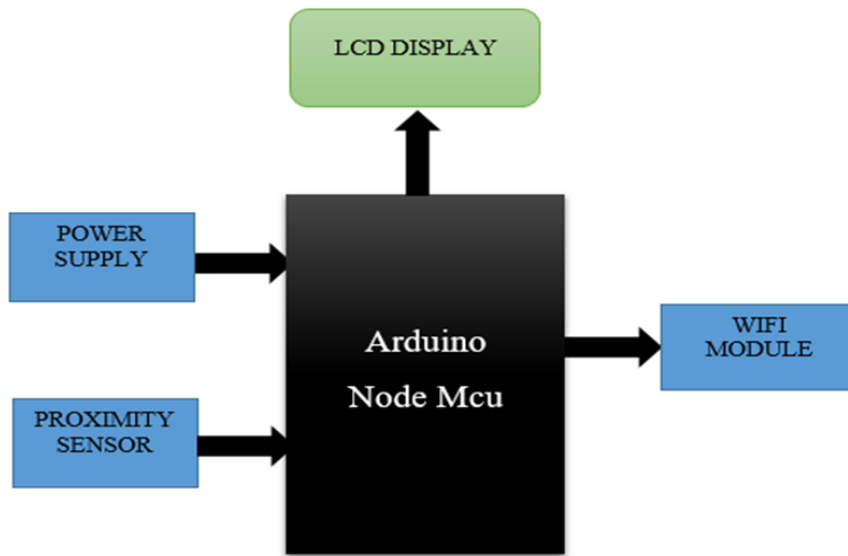


Fig 4 Block Diagram

**VI. WORKFLOW**

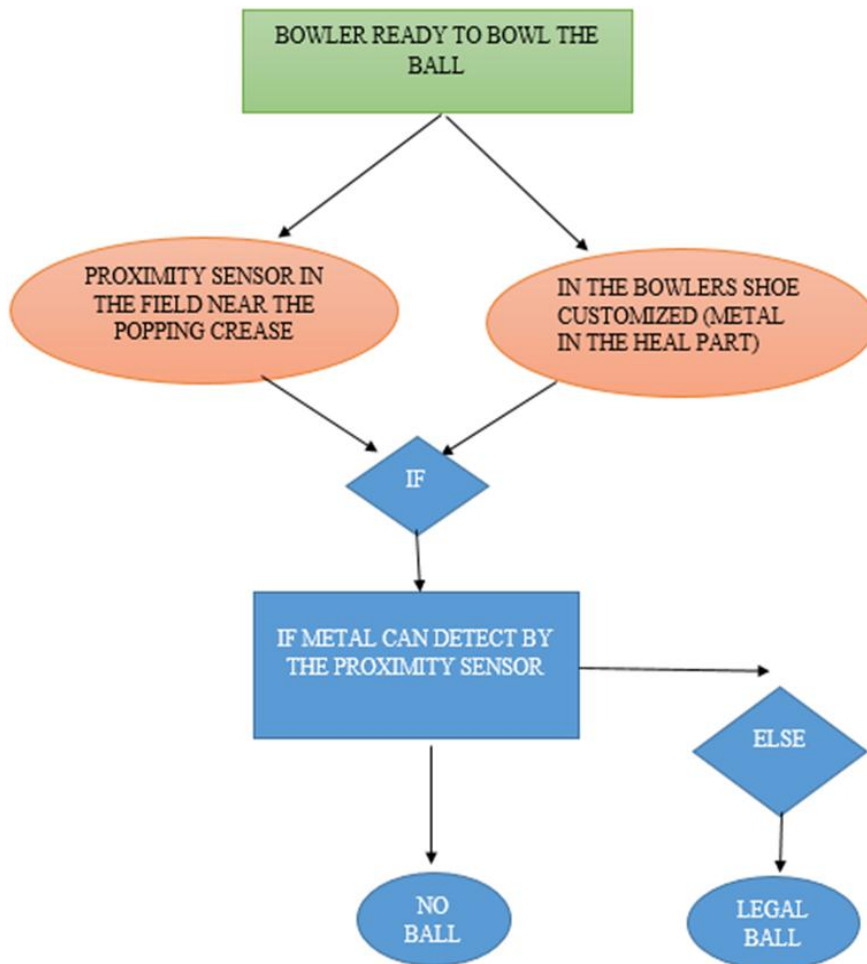


Fig 5 Work Flow



## **VII. CONCLUSION**

In this system it tells about Sensor can also plays Major role in the sports field also, here we use the sensors in the ground to detect the Front foot No Ball it reduces the umpires work and Controversy. The sensors on the popping crease to detect the No Ball automatically. This will remove the involvement of the On Field Umpire and the Third Umpire from the decision of the No Ball. By solving this problem cricket will get cent percent accuracy in No ball without any human factor intercession in it

## **REFERENCES**

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