ITSP-2k15

Team Name- Robotrons

Team Members-
Prabhav Mohta
Kanishka Panda
Prakirt Jhunjhunwala
Shivam Garg

*We have submitted another abstract with the same team name and the same team members but with the project name ‘Virtual Mouse’.

TENNIS BALL PICKING BOT

Introduction

This bot will be moving on the tennis courts. It will use a camera which will detect the green tennis balls fallen on the court. It will move close to the ball, will stop at a particular distance from the ball, and then pick up the ball and put it in a container attached with the bot. The player will have a remote through which the person can ask the bot to stop. The player will move to the bot, pick up the the balls, switch on the bot again.

Implementation

We will use image processing for the bot to detect the the balls. It will then move close to the ball, will stop at a particular distance which will be decided with the help of sensors attached in front of the bot. This will help in effective picking of the balls.There will be a picking mechanism which will put the ball in a container attached with the bot itself. Switching on and off of the bot can be controlled with a remote.

Components Needed

1 arduino uno
1 camera(for image processing)
Sensors
3 to 5 (300 rpm) dc motors, 2 servos
Lead Acid Battery
Chassis and tyres
Remote

Timeline

Ist week-

Learning about opencv, arduino.
Constructing the basic structure of the bot(the mechanical part).

2nd week-

Beginning the image processing part.
Building the ball picking mechanism.

3rd week-

The electrical part- motors, L293D, servos, sensors,...
Continuing the image processing and simultaneously testing it.

4th week-

Completing the image processing and testing it.
Trying to move the bot(having the electrical part completed).
Making the remote and ensuring its functioning.

5th week-
Debugging and fixing the glitches in the bot.

6th week-
Ensuring accuracy of bot.
Aesthetics and giving final touches.

Cost Estimate
8k