ITSP 2015-Project Abstract

Project Title: FoosBot

Team Name:4Play

Team Members-Harsh Gupta (140020077) Chemical Engineering
Amal Vats(14D260008) Engineering Physics
Akshat Kejriwal(140040007) Civil Engineering

Abstract-

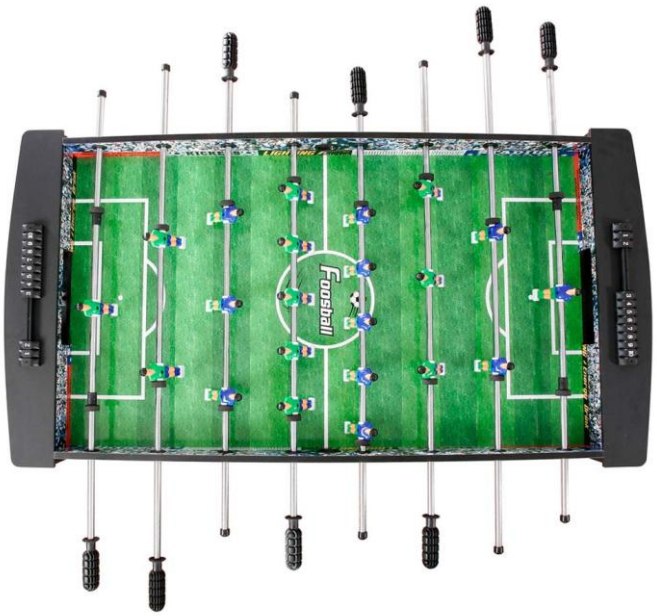
Our team's aim during the entire course of the ITSP Project slot would be making a working Robotic Device that allows the User to play Foosball(Table Football) remotely.

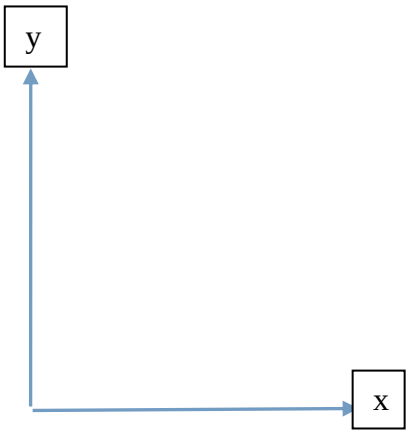
Basically the game would be played by a Human player against our working 'Bot', which in turn would be remotely controlled by another User. The reason we have decided to control the Bot remotely rather than program it to play itself is because we want to control the reaction time of the bot as much as we can without inserting a factor of unwanted scarcity of resources.

With this Bot we aim to achieve better than human accuracy and skill. This team of ours is also interdisciplinary in nature, so maybe we could extend our combined skills towards making this possible.

Features-

1. The Mechanical Aspect: We hope to construct the main structure borne out of a simple but efficient Chassis. To the main structure We'll attach four movable handles which will have two kinds of possible movements. Firstly a lateral(Forward Backward) motion to control the position of the players on the the Y-Axis. Second would be a Rotational motion which will control the direction and the power of shots along the X axis.





We hope to make use of Servo Motors for the aforementioned rotation and lateral motions, But if the situation forces us to go in a different direction, we'll make use of hydraulics for lateral movement. This we say because we know there is some limitations to the RPM of Servo Motors.

2. The Programming Aspect: We hope to achieve total control of the Bot through External Controllers presumably gaming Dualshock controller or just simply a Keyboard.
Since we are putting a remote controller aspect, most of the Programming manpower would involve in establishing control, and respective responses by the Servo.

The main advantage that we feel our remote access has over A.I. is the sheer amount of control we exercise over our bot, the decrease in technical requirements, and usability.

Cost of Manufacture-

The cost that we believe would be involved in the completion of this project is around 7 to 10k. This range was established by keeping in mind the Mechanism either Hydraulic or Servo or both. Also money would be spent on the Structure and Controller. Others costs would be purely situational in nature.

Uses-

Other than the most obvious use i.e for playing Foosball, The Movements can easily be modified to do a variety of tasks such as tasks involving movements on 2-d plane. These can be for sketching, simple organization, etc, but the uses are only limited by the type of features that can thought of.

An A.I version of our idea has been an inspiration. The link to the same is provided below

https://www.youtube.com/watch?v=JuljH8Z9Fqg