

Peppy

The Peppy subgroup attempts to develop a useful and possibly marketable robot. The project has entailed extensive electrical systems development, mechanical design and development, system communication, preliminary business planning, project and time management, research and programming and has demanded a high level of hard work and dedication from its members.

Bartender

This project has embarked on using the process of automation via a robotic arm by setting up and executing a program to automate an everyday process. The everyday process settled upon was bartending. A program would then be written to control a robotic arm to pour, mix, and serve drinks. Once the functions of the arm are figured out a mini-manual will be compiled from the five manuals given to IIT upon purchase of the arm, which will serve as a resource for upcoming IPROs.

Sonar

This project involves the designing and creating of a sonar array, which would detect and identify objects using an emitter and three microphones. This three-dimensional array would be a sensor connected to a robot, specifically the robot created by the "Peppy" group. The sonar would solve the problem of robot navigation and would potentially give the robot more in functionality by allowing it to recognize patterns from objects in front of it.

Competition

This sub-group of the IPRO 316 spring 2004 has laid down the groundwork for the implementation of a robotics competition sponsored at IIT. The subgroup tried to establish basic goals, needs and problems that might be faced in going ahead with this project. Contacts with some of the IIT faculty has aided in the design of a possible course. Research has been started for establishing the robots, the course, and the rules. The IIT Robot Challenge will be a miniature version of the DARPA Grand Challenge hosted in the desert in the beginning of this year. Participating teams will comprise of interested college students and professors, funded on either educational or corporate level. The subgroup's basic objectives are to raise the interest of IIT students and faculty in robotics, provide a high level of competition and exposure to practical problems and promote innovative thought and application of modern technology.

Mobile Platform

This IPRO 316 Subgroup's project is designed to be a demonstration of robotic experimentation performed at IIT, and the project deliverable has been devised to facilitate the use of a modified robot for future educational and experimentation purposes. The goal of the mobile platform subgroup is to transform a Roomba into a robotic mobile platform such that it could be used as a base for experimentation and analysis. To accomplish this task, a new microcontroller was chosen which would also allow future students to create additional functionalities to this Roomba base. Components essential to a mobile platform (motors and sensors) were tested and programmed individually.