Project O.D.R.A

(Object.Detecting.Robotic.Arm)

By

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a) Abstract:

The idea behind this project is to develop a simple robotic arm with object detection capability. The robotic arm is designed to pick an object autonomously after it is trained to detect and process the given object initially.

The arm is built with the “Tetrix” kit. 5 servo motors and a stepper motor are attached to the arm. They interface with the Arduino micro controller which helps in guiding the arm to the required configuration/position.

OpenCV in Raspberry Pi is used for image processing. The required object’s model is trained for detection before hand. Given an object as an input, the position/coordinates of the object is identified. The arm uses this data to move accordingly to retrieve the given object.

b) Components Required:

- Tetrix Kit
- 5 x Servo Motor
- 1 x Stepper Motor
- 1 x Arduino
- 1 x Raspberry Pi
- 1 x Camera
- 1 x Plywood Base

c) Budget Proposal:

All the above components are available either in CEEMS lab or HiDes lab.