Subtask - Line following

IR sensing for detect lines (selected) : Raykha S8 sensor module(selected)

Features

* IR sensor - TCRT5000
* Indication - Red SMD LEDs × 8
* Channels – 8
* Pitch -10mm
* Supply voltage and current – 5V DC and 200Ma
* Digital and analog outputs – 8

Alternative IR sensors -4 channel line tracker

Features

* Supply voltage – 3.3V-5V
* Detection distance – 1mm to 60cm adjustable
* Output interface – 6-wire
* Output signal – TTL level

We chose Raykha S8 sensor module for our project. Because its resolution is higher than line tracker. And in line tracker we have to adjust the voltages using potentiometer. We have to do a lot of tests before using it.

Alternative methods for line following : Image processing technique

The main issue is lighting in this method. If a shadow appear on the line robot doesn’t have any idea to correct that. We have to implement a lot of tests to identify those kind of stuff. To get a good outcome with high resolution we have to do so many tests including normalizing images and then draw histograms to correct errors. Therefore we have to pay much time for that. And also for edge detection images go through the convolution filter that is focused on detecting line edges. But IR sensing is fairly easy to handle and it is time saving.