Abstract for DetectorX

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Idea and Algorithm

Our bot detects mines by scanning the mine, following the white grid lines. The line following mechanism requires 5 sensors. One placed on the center of the line, two just outside the line and the remaining two far away from the center. The sensors close to the line prevent small perturbations in the movement of the bot while the ones far away help in turning. Two other sensors are placed to detect the black color of the mines.

Sensing Mechanism

We are using 7 TSOP 1738 IR sensors.

Motor Driving mechanism

We are using L293 for driving two DC motors. We can control the speed of he bot by feeding PWM from the microcontroller into the enable pin of the L293.

Central processing

We will use Atmega 16 microcontroller.

Displaying

We will use 2 7-segment displays to display the counted number of mines. 7447 drivers will be used to control the display

Mechanical model

Our bot will be made on a mica sheet with two wheels and a castor in front.

Present Status of the bot

We have made the motor driver circuit, the circuit for generating 38 KHz signal for the IRLeds and the sensor board. The circuits have been tested and are working perfectly. Picture of the circuit is attached.