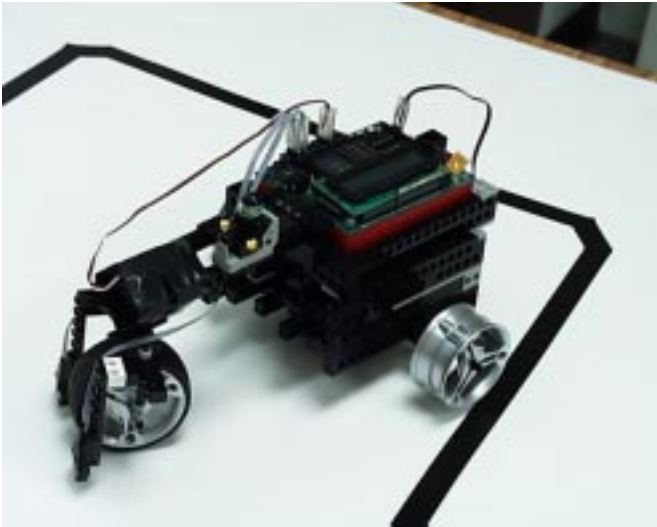


Robotic Line Tracking

Computer Science Department, Rowan University

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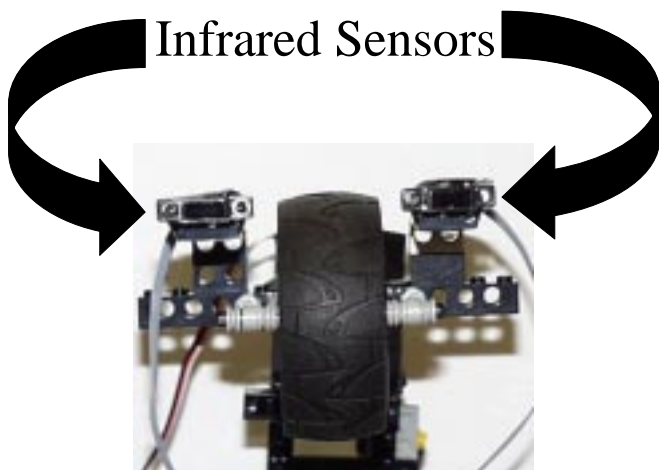
What Did We Do?

Our robot follows a dark path laid out on a light background.

How Did We Do It?

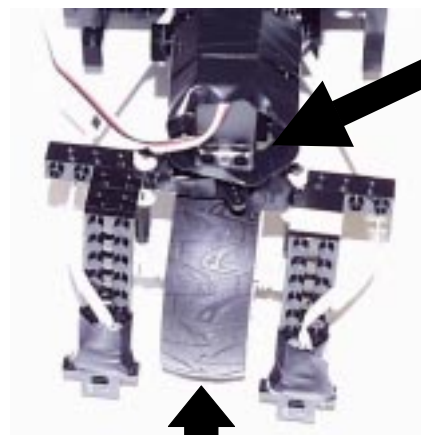
FIRST

- Infrared Sensors detect line.
- One sensor mounted on each side of the front wheel.



NEXT

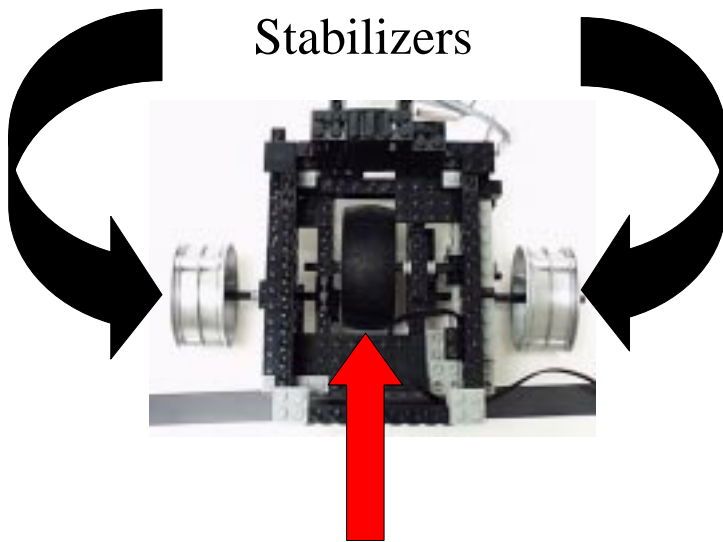
- Front Wheel is mounted on a servo motor.
- Robot gets servo to pivot, effectively steering the robot.



Servo Motor

Steering Wheel

FINALLY



Stabilizers

Drive Wheel

- Robot base has drive wheel and supports the HandyBoard.
- Center drive wheel allows the base to pivot and follow front wheel around corners.
- Stabilizers help prevent the robot from tipping over.

How it Works

The sensors on either side of the robot's front wheel are infrared sensors, they return a number between 0 and 255. The infrared sensors are typically used to detect distances, the larger the number the farther the object. However, our software interprets the numbers so that a larger number represented the black line and a smaller number represented the white background. When a sensor detects it is over the black line, the robot can detect that the line is moving in the direction of that sensor. The robot then uses the servo motor to pivot the front wheel until the sensor is no longer over the black line. The robot then continues until another adjustment is necessary.

Credits

We received guidance in this project and presentation from Dr. Jennifer Kay, Rowan University Computer Science Department.