Using Infrared Sensors to Follow an Infrared Beam

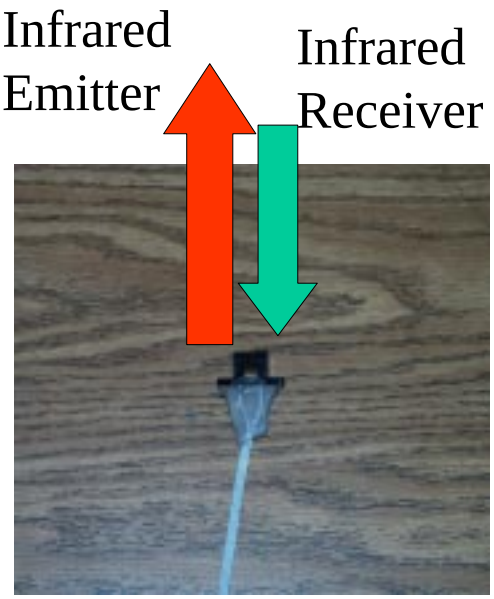
Scott Sobieski, Thomas Richards, David Peacock,
Joshua Rosen,Tuan Hoang

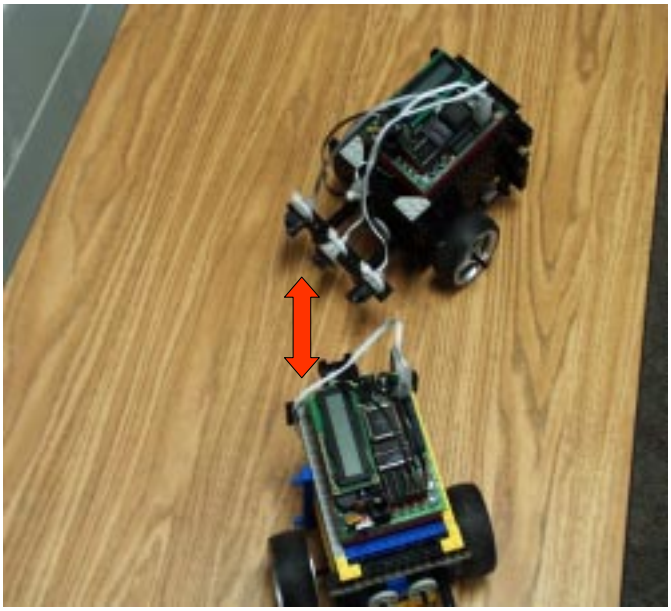
sobi8372, rich2241, peac1027, rose9933, hoan7482@rowan.edu

Rowan University, Computer Science Department

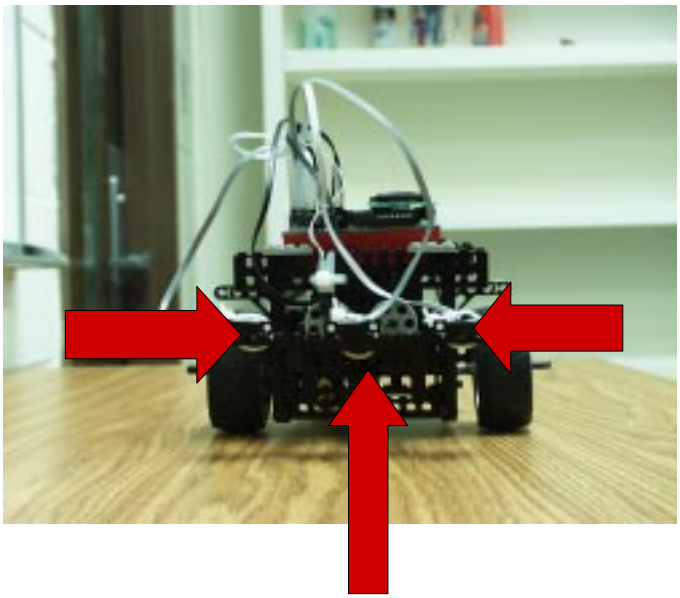
The second robot follows the infrared beam from the first robot.

These sensors were *designed* to have both the emitter and the receiver turned on to detect distance from an object. *In our system*, the lead robot's unit ONLY EMITS and the trailing robot unit ONLY RECEIVE.





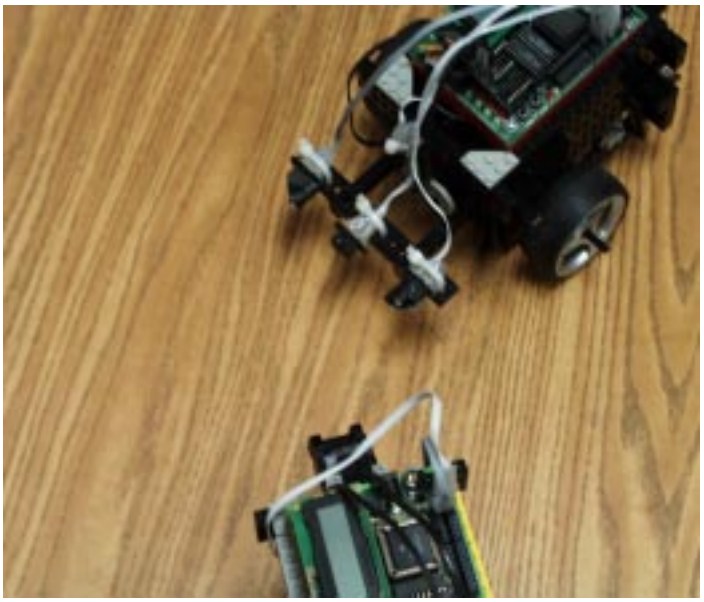
The receiving infrared sensors produce a value between 0 and 255 depending on their distance from the emitting beam. A large value (255) is a weak signal indicating a greater distance. As the distance between the two is closed, the signal reduces to zero,.



Receiving Infrared Sensors

To accurately follow the infrared beam, three sensors are used to receive the signal.

The two outside sensors are used to turn. If the left sensor's value is less than the center and right sensor values, the robot turns left.



The robot will never wander off because when its beam is broken, it pauses. The two robots won't collide because if the receiving sensor gets too close, the following robot will pause.

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