

# Light-Tracking in a Noisy Environment

## An Experiment in Autonomous Robotics

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### What is the problem?

In a perfect world, things are either true or false, off or on. In the real world, however, no data is perfect. Tracking a single point of light requires the robot to ignore sunlight, overhead light, and other conditions collectively known as ‘noise’.

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### What is the solution?

The robot’s light sensor does not merely detect light and dark, but approximately 250 distinct levels of brightness. Using several sensors with this ability, the robot can single-out and follow the movement of the closest, brightest light source.

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### The robot in action:



(1) The robot detects a light directly ahead and moves to it.



(3) The robot turns toward the light and moves forward again.

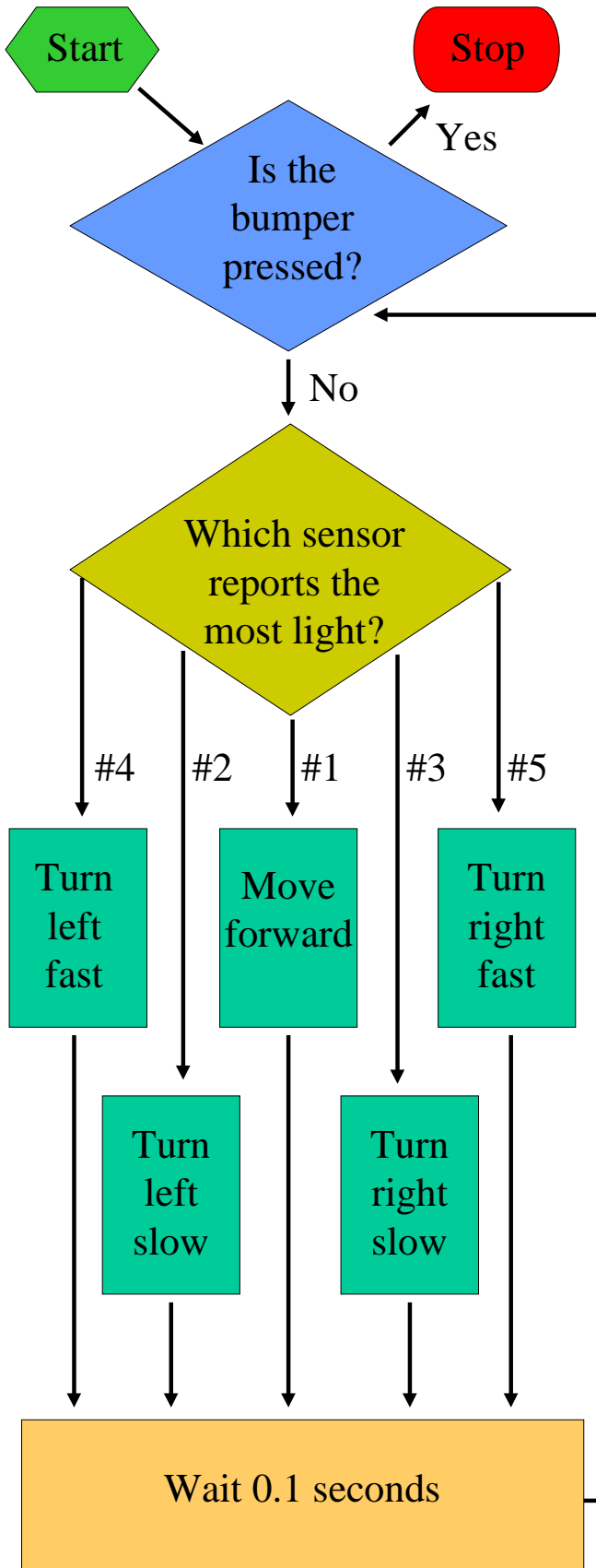


(2) The light is moved to one side of the robot.



(4) The robot moves forward, reaching the light source.

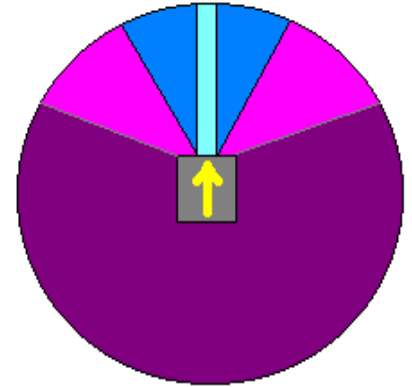
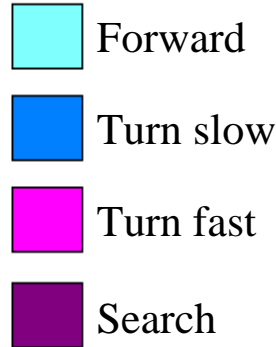
# Decision-Making Process



# Reaction to a Light Source

Based on the position of the light in relation to the front of the robot (indicated by the arrow).

## Legend



## A look inside...

- A: Sensor array (only 3 shown)
- B: Rear wheel assembly
- C: Twin DC motors
- D: 'Worm' gears driving two large front wheels

