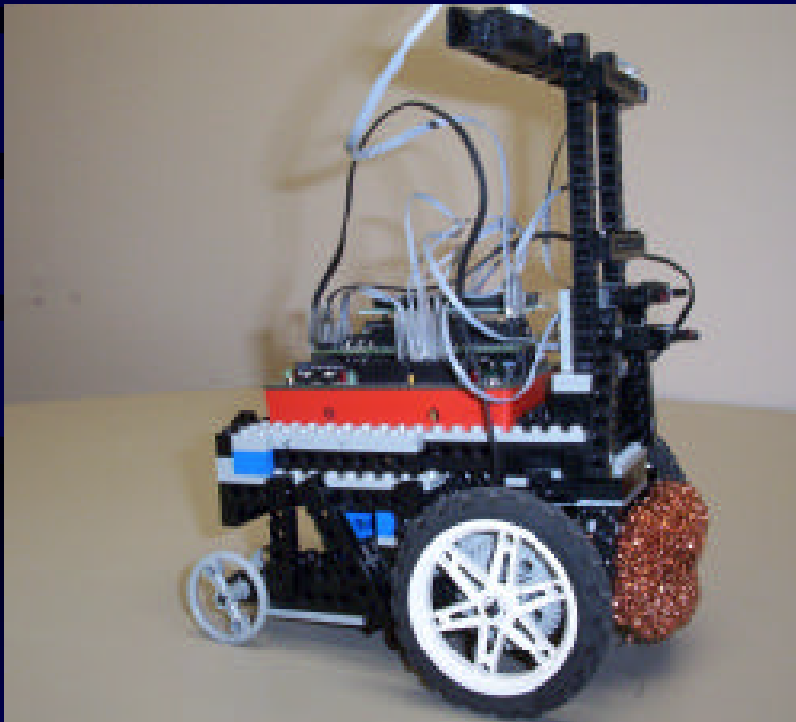


# Project 2

Team 4

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# Overview



- Reactive Paradigm
- Differential Drive
- Optical Rangefinders
- Light Sensor Array
- Shaft Encoder

# Form & Function

- Avoid hazard objects
- Keep moving
- Follow light
- Find light

# Avoid Hazard Objects

- Hardware - Optical Rangefinders
  - High atop robot
  - Angled forward & outward
- Software - Avoidance Behaviour
  - Compare rangefinders w/ threshold
  - Turn away as necessary

# Keep Moving

- Hardware - Shaft Encoder
  - On passive wheel
  - On rear left axle
- Software - Slip Recovery Behaviour
  - Poll shaft encoder
  - Determine whether robot is moving
  - Turn away as necessary

# Follow Light

- Hardware - Light Sensor Array
  - Fixed position
  - Spread arrangement
- Software - Goal Seeking Behaviour
  - Compare sensors w/ threshold
  - Determine position of light
  - Arc toward target

# Find Light

- Hardware - None Required
- Software - Random Walk Behaviour
  - Spin left for random duration
  - Travel straight for random duration

# Putting It Together

- Arbitration
  - Select dominant behaviour
  - Generate motor command
- Motor Control
  - Front wheel drive
  - Differential steering
  - Large front wheels