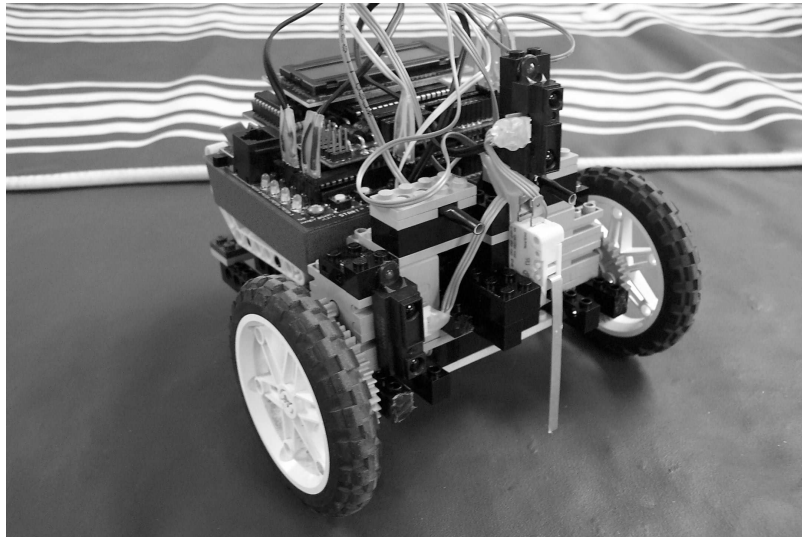# CS5973 Project 2

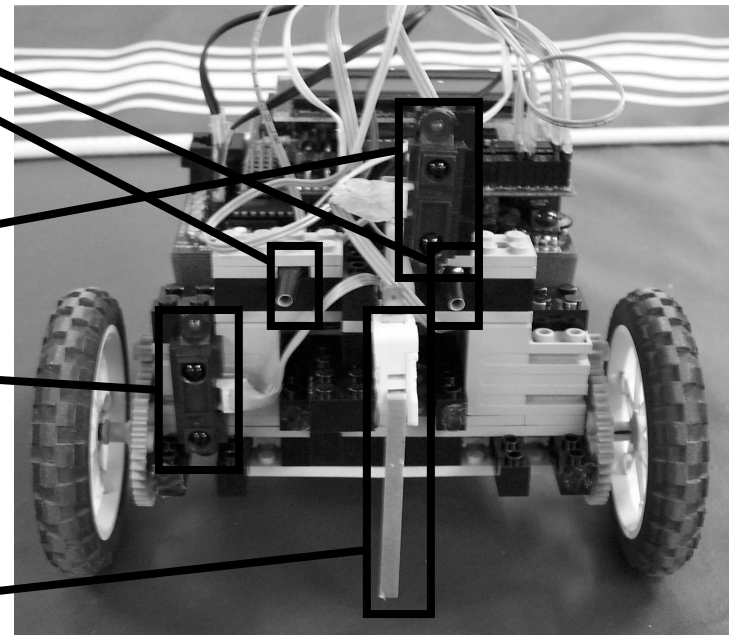Mark Branson, Amit Mathur,
Matt Roman, Mike Taylor

Jenny

- Small, Compact Design
- Quick
- Simple Software System
- Unfortunately, also some flaws

Hardware Design

- Two light sensors for guidance
- Two IR range sensors – one for rocks and one for buckets – at different heights
- Single bump sensor for bumper

Hardware Design Cont'd

- Geared for speed – 5:1 gear ratio on front wheels, with a free-moving caster in the rear
- Small footprint for increased maneuverability – designed to afford passage between obstacles
- Zero turning radius

Problems with Hardware

- No way to sense obstacles while in reverse or on sides

- Range of sensation extremely narrow on light sensors

- Too quick – Jenny sometimes outruns her sensor data

- Many sensors use power faster

Software Design

- Hierarchical state-based model with reactive elements

- Light-seeking module operates at all times, unless an obstacle is detected

- An escape routine, with slightly different behavior for buckets and other obstacles

Software Design Cont'd

- Light-seeking routine turns seeking light, moving only if it finds one or turns completely without finding one
- Escape routine backs up and turns slightly

Problems with Software

- Lacks sophistication
- Could have used light sensors more effectively
- Would have benefited from a more complicated search routine
- Not enough abstraction of motor actions

Conclusion

- One Light
- Less than we'd hoped for, to say the least