

Triskadekabinaphobia Design Review



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Software

Written in Jython, with image processing in Java

Image Processing

- Camera takes fast low resolution pictures
- High-order 6 bits of each color index into table for color classification
- Flood-fill to identify objects

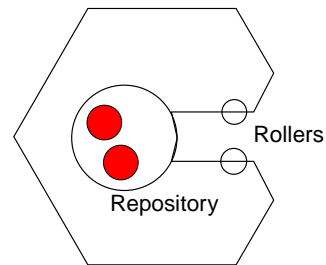
Mapping

Spring-Relaxation algorithm

Behavior

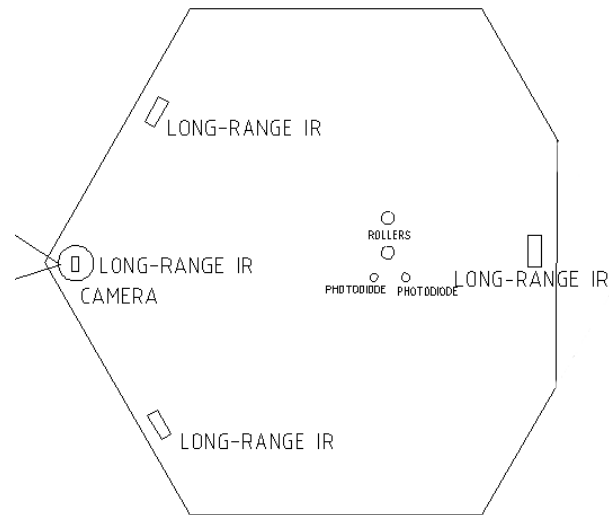
Finite-State Machine (?)

Robot Design



- Truncated hexagon shape
- “Mouth” in front to accept balls
- Moterized rollers suck in balls, with photodiodes to count
- Storage chamber inside
- To release ball, bot reverses rollers and backs up, shooting out ball
- Attractive bovine appearance

Sensors



- IR Sensors in front, back, angled front, forming upside-down peace sign
- IR Sensors at height $\approx 18''$ see only walls
- Two photodiodes/phototransistors on either side of rollers
- Camera mounted in front, above ball mouth at $\approx 6''$