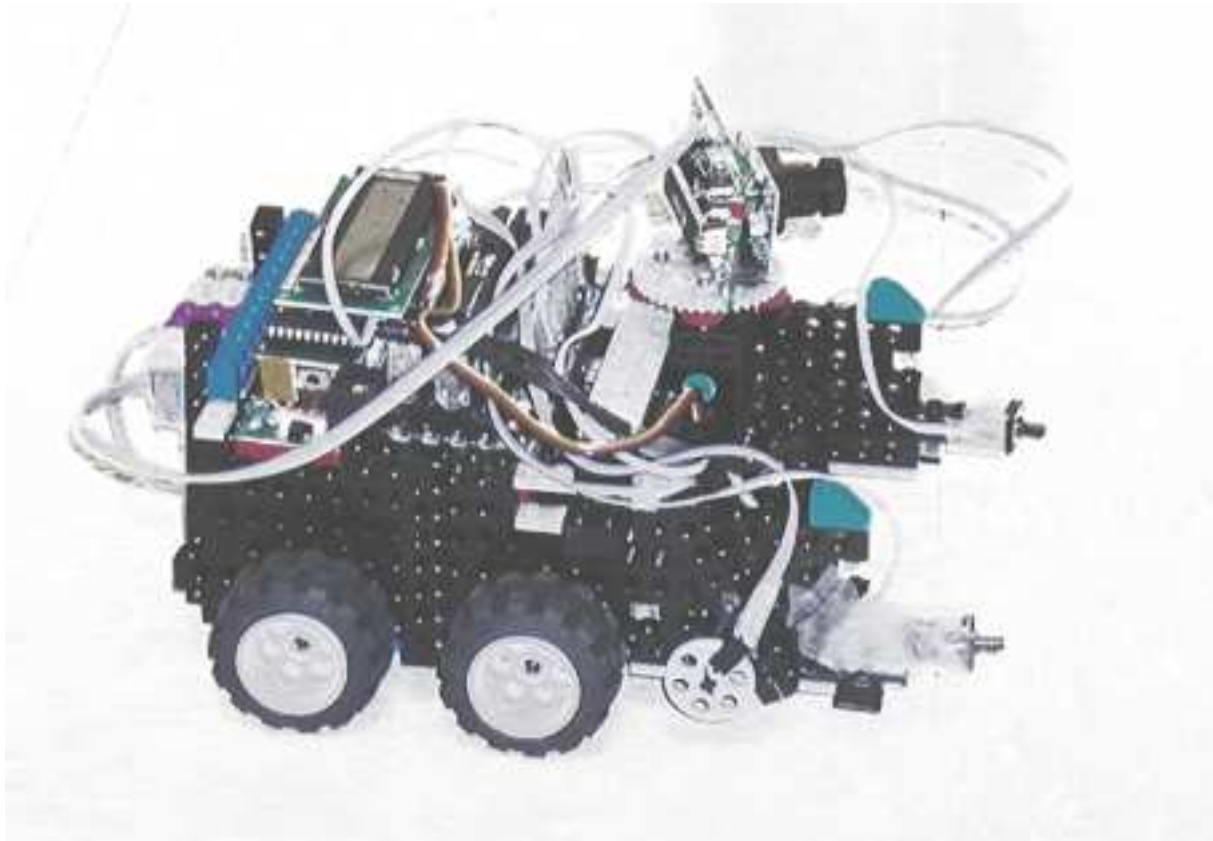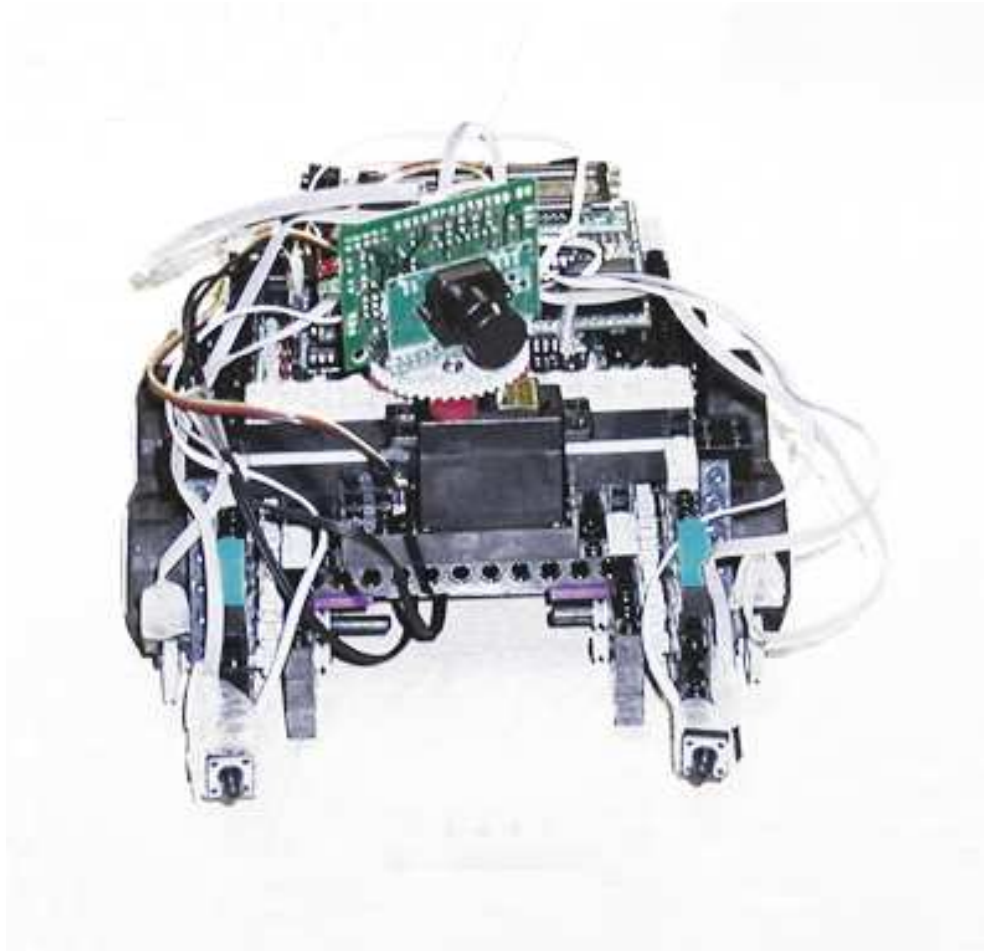# Project 3

Group 10:
Amit Maole, Brent Eskridge

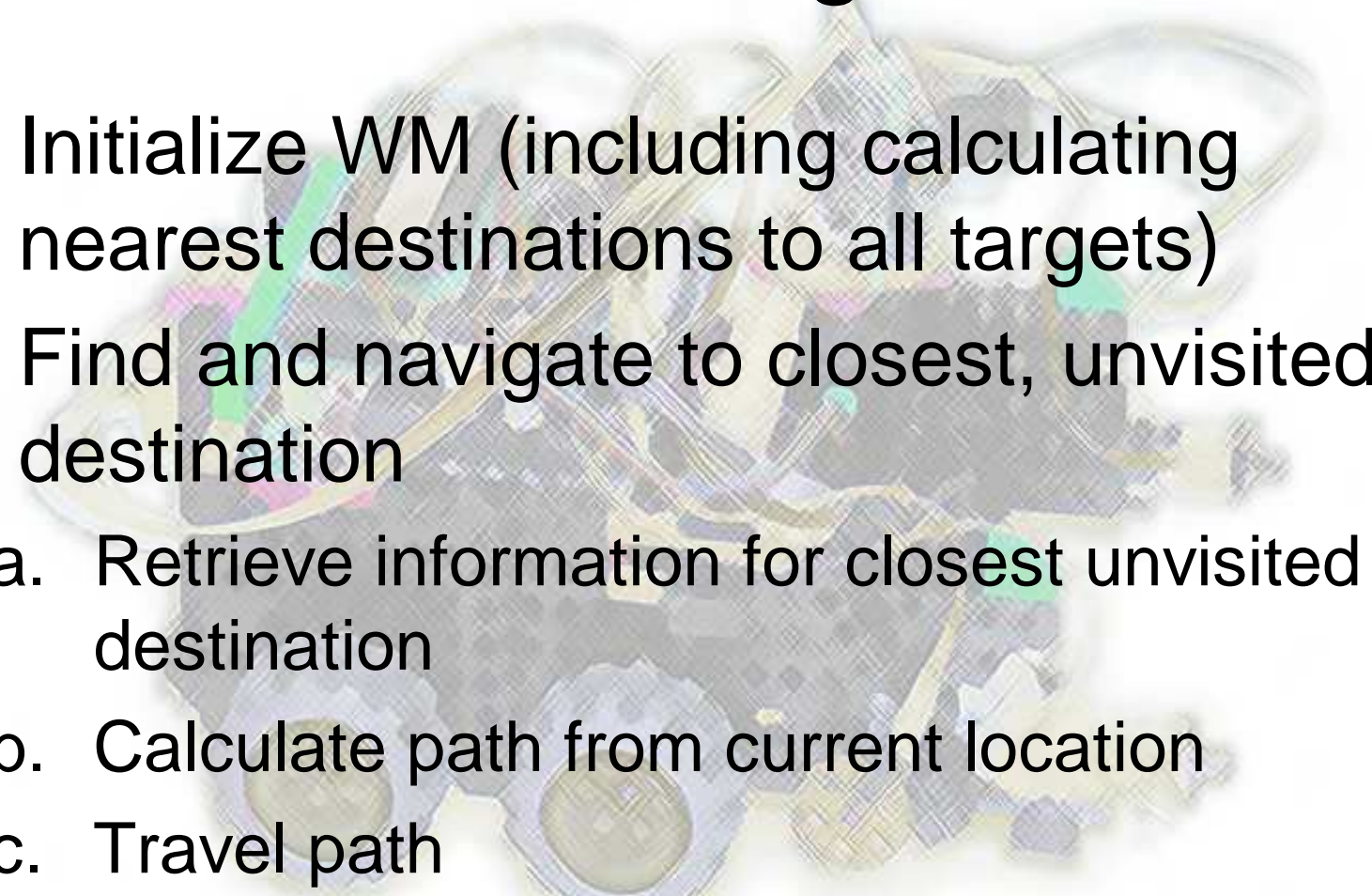Klo Utley, Tony Lopez

Hardware

Hardware (Cradle)

Software: World Model

- Each destination: its location, our confidence in its location, and a flag indicating whether or not we had visited it was stored.

- Each target: its location, our confidence in its location, a flag indicating whether or not it had been retrieved, and the nearest destination was stored.

- The WM could accomodate 100% error in the input data

Software: Algorithm

1. Initialize WM (including calculating nearest destinations to all targets)
2. Find and navigate to closest, unvisited destination
   a. Retrieve information for closest unvisited destination
   b. Calculate path from current location
   c. Travel path

Software: Algorithm (cont'd)

3. Retrieve targets:
   a. Retrieve information for first target for destination from WM
   b. Calculate path from current location
   c. Travel path
   d. Calculate reverse path back to destination
   e. Travel path
   f. Mark target as retrieved
   g. Jump to a. while there are remaining targets for this destination

Software: Algorithm (cont'd)

4. Mark current destination as visited

5. Jump to 2. while there are unvisited destinations

6. Pursue blue robot (not implemented)
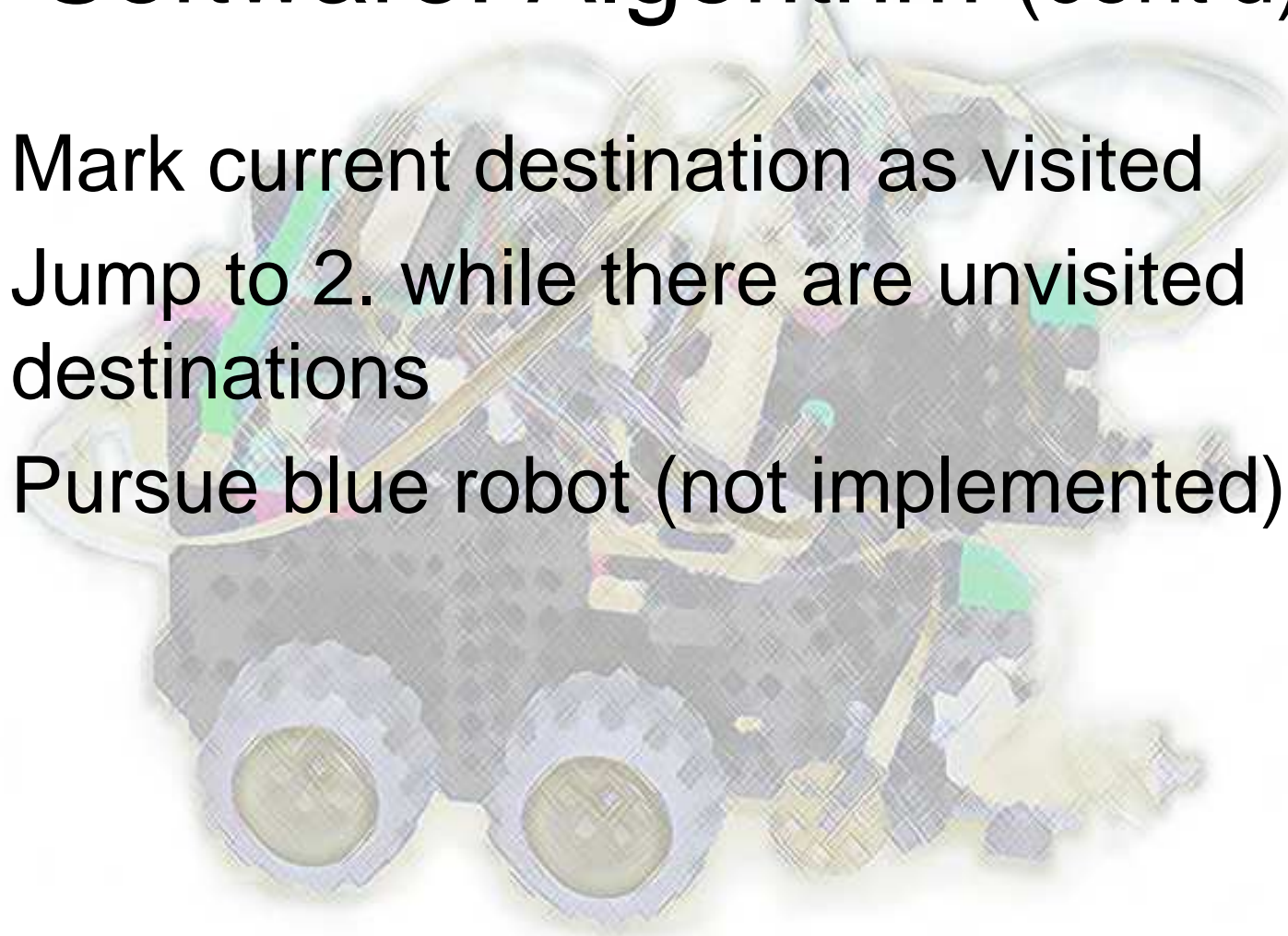
Plans Not Implemented

- Correcting orientation using destinations and origin
- Verify destinations using IR sensor
- Detect new destinations using IR sensor
- Verify targets using CMUCam
- Detect new targets using CMUCam
- Track and pursue blue robot

Testing/Results

- World Model: accurate planning
- Drive Straight for a given distance: precise to within ½" after traveling for 10'
- 90° turns: our Achilles heel, complete lack of consistency between trials with same parameters
- Results: failed to move any targets into destinations