Research: Work Due 2/6

**General Questions/Comments-**

What careers are similiar to this research?

With more undergraduates joining the research group, what will our schedule look like?

What is top-down Design?

I will be moving all of the files on dropbox onto github (So that way the files are public and we keep everything in one place).

For this week I have done reading on another Review Paper for Swarm Robotics.

<http://www.infotech.monash.edu.au/assets/documents/srlab/search-and-tracking-algorithms-for-swarms-of-robots.pdf>

Search and tracking algorithms for swarms of robots: A survey

**General Idea:**

Details difference between

**Questions:**

**Ideas:**

Ideas for projects using swarm:

It would seem like in general we are looking to do research in a macroscopic analysis (looking at the global rule of a swarm). Thus we should define an action that we want to observe and find general rules about the robot swarm from an analysis of how the action was acheived. However, it also seems like there is some interest in involving graph grammars/compass to this application.

1) Search and Retrieval

Comments) While this is a traditional swarm robotics problem, there isn't a lot of rules that define the behavior as specified in Swarm Robotics: A Review from the Swarm Engineering Perspective (What I read last week) by Marco Dorgio Et Al (Page 32 under Requirement modeling and specification).

Alli's Comments)

2) Dynamic Enviroment

Comments) A changing enviroment where the robots already have a task assigned, and must accomplish it with a changing enviroment. An analogy would be ants trying to form a bridge while it can rain, have heavy winds, or neither. A dynamic enviroment can help us understand the rules that define swarm behavior.

Alli's Comments)

3) Diversity of tasks

Comments) Lets say in order to cross a bridge the robots need to form a bridge out of popsicle sticks. Half of the robots have popsicle sticks and the other half have glue. The popsicle stick robots need to communicate witht the the glue robots to form the bridge. In this case you have 2 different robot tasks (gluing and laying down/carrying popsicle sticks). This adds more to the "communication" study of swarm robotics, but takes away from the homogeneity.

Alli's Comments)

Open Space for notes about Graph Grammars