Weekly reports are to be emailed to atbecker@uh.edu by 5:00pm on Tuesdays. The purpose of a weekly report is to: (1) give you text and images for your papers, thesis, and dissertation, (2) document progress, (3) identify if you are stuck or need resources.

Weekly report

1. **My *Goals* from last week**
   - Pay IROS Conference Fee
   - Implement some algorithms into the MATLAB ROS
   - Await the new particles and try them out onto the current Helmholtz coil setup
2. **My *Accomplishments* this week**
   a. ValueMap for ClosestFrontier heuristic
      i. Located @ https://github.com/danielbao/IROS2017mappingParticles/blob/master/code/matlab/ClosestFrontier_VAF.m
      ii. Created a checkNeighbors function that calculates which frontiers have the lowest value (which frontiers are surrounded by the most boundary cells).
      iii. Working on a BFS expansion to use this valueMap and make the greedy and best decision on which frontier to move towards
   b. BFS Expansion
      i. Wrote the outline for the code with Arun, still working on it!
   c. New Particles shipped!
      i. Calculated the volumes for a neutrally buoyant solution

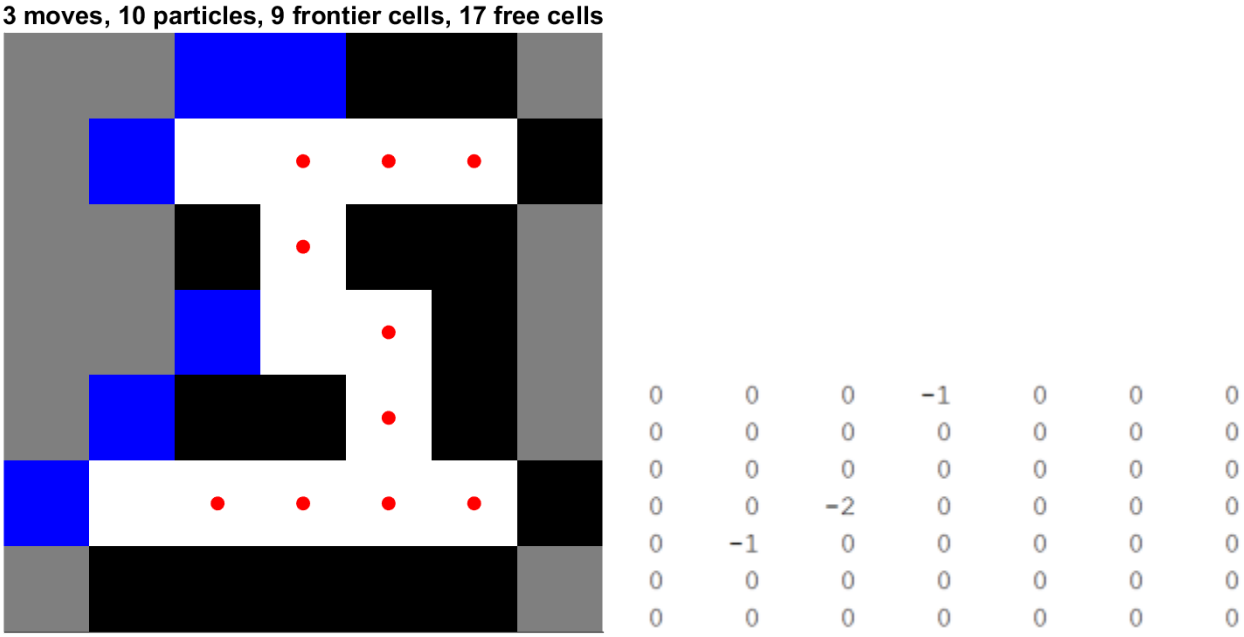

Figure 1: ClosestFrontier_VAF in action with the corresponding valueMap for the frontiers. As you can see, the top frontier cell is surrounded by 1 boundary cell, so it would have a value of -1. The frontiers below it have 2 boundary cells next to it, therefore it has a value of -2.

3. **My *Goals* for next week**
   - MATLAB ROS Revisions
   - Global SwarmConvergence in Cricle
   - Physical Experiments with the new particles
     a. Met with Dr. Becker yesterday!
4. **What I need Dr. Becker to do:**
   a. Don't forget about the SURF luncheon tomorrow at 11:30!
   b. …