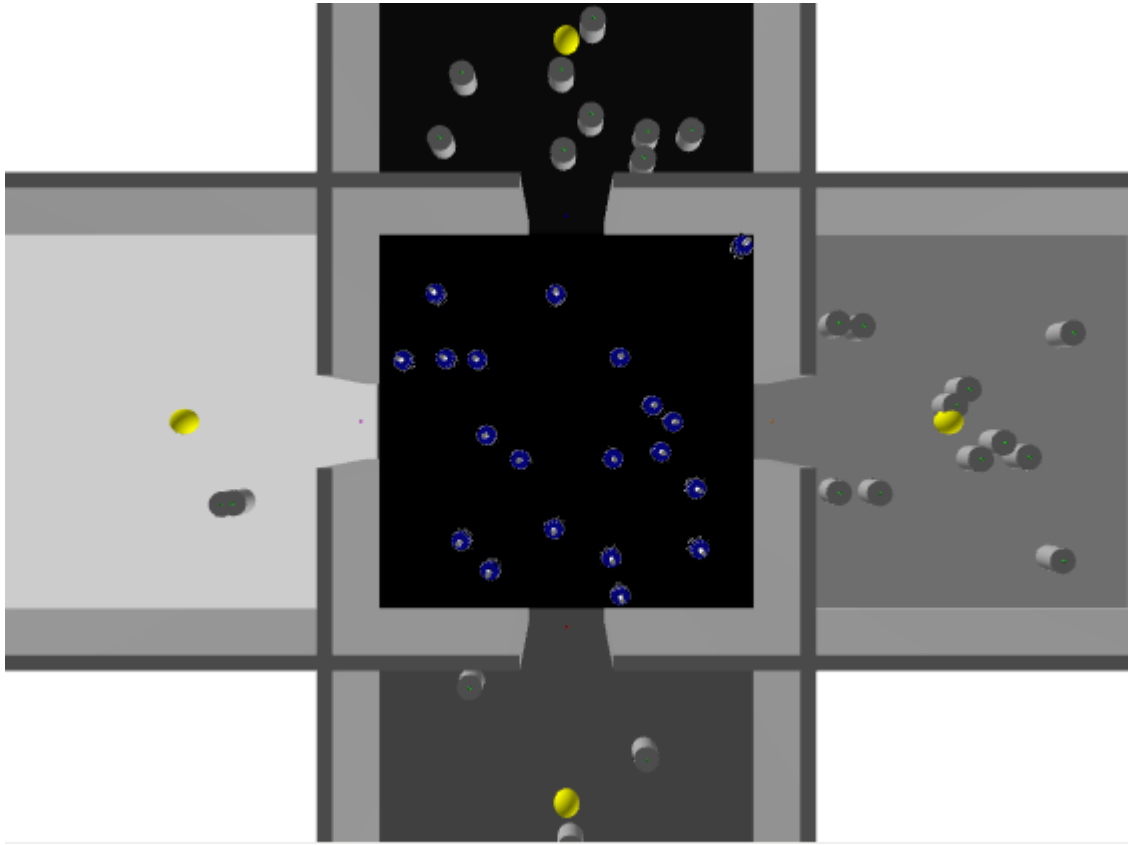
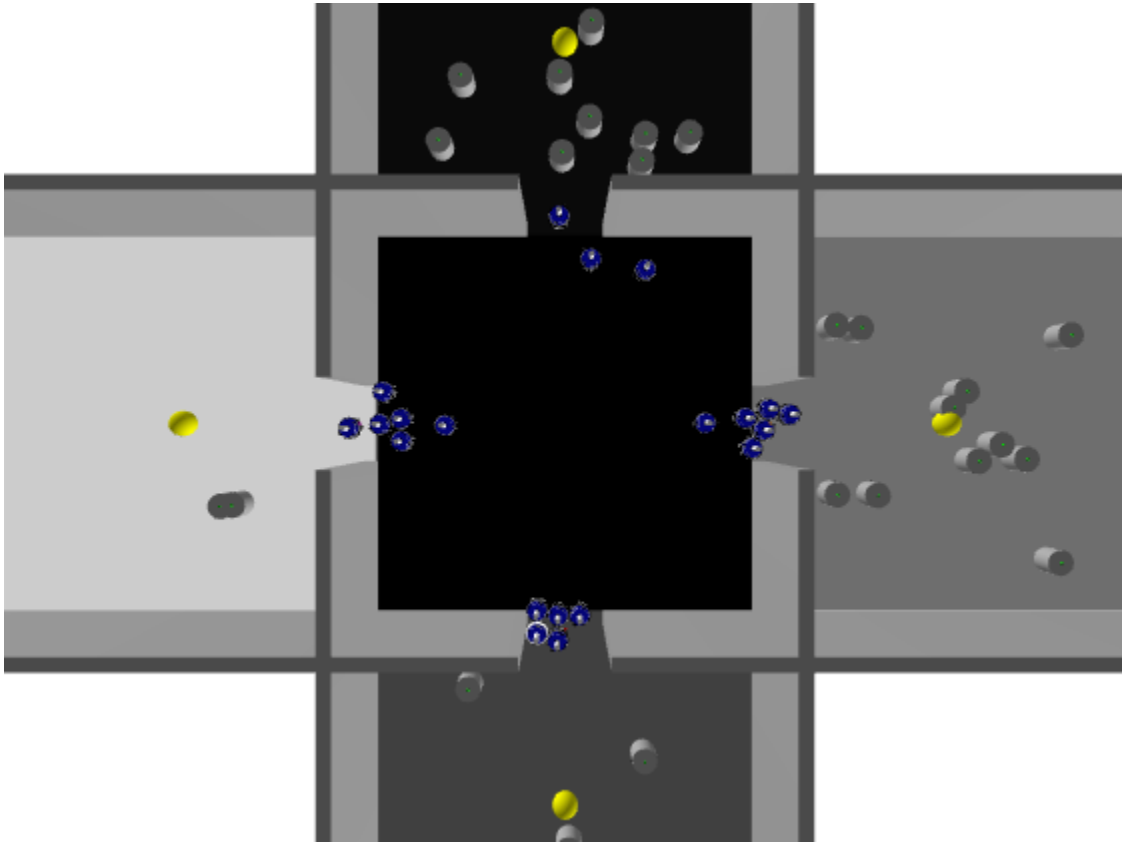
INFO-H-414 - Swarm Robotics Project

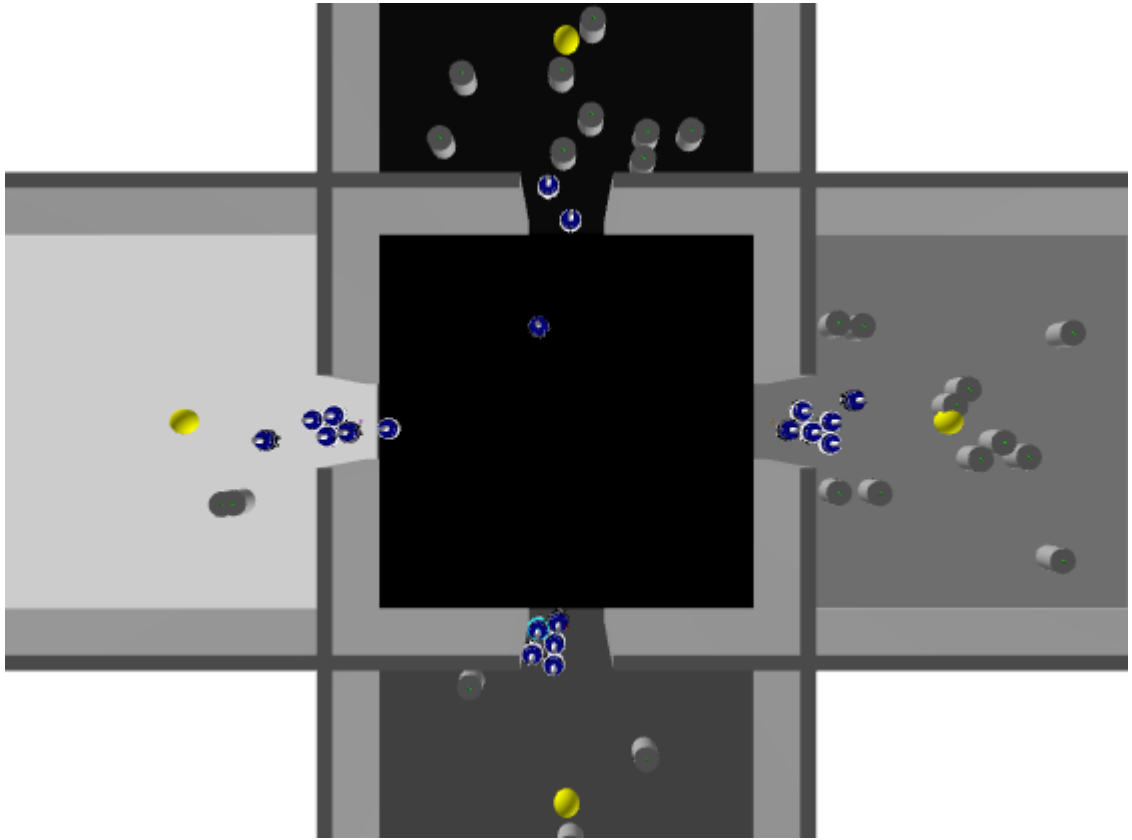
Main steps - Start



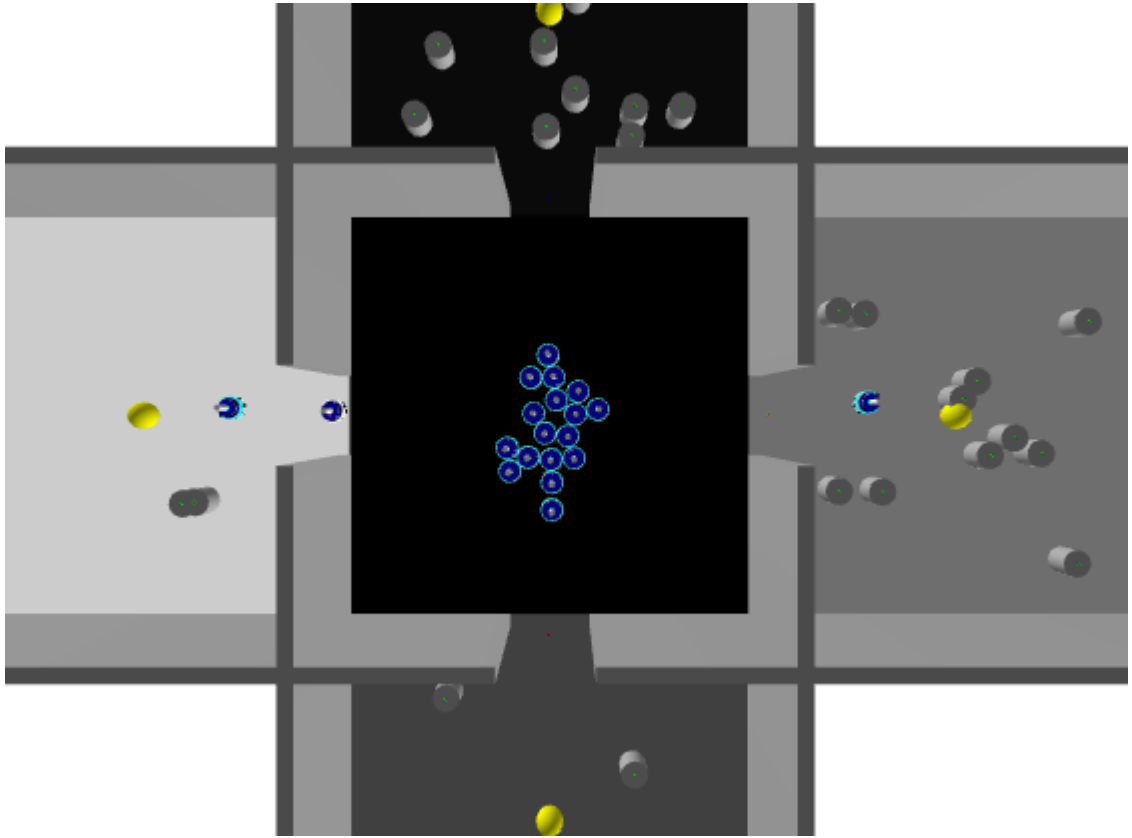
Main steps - Split



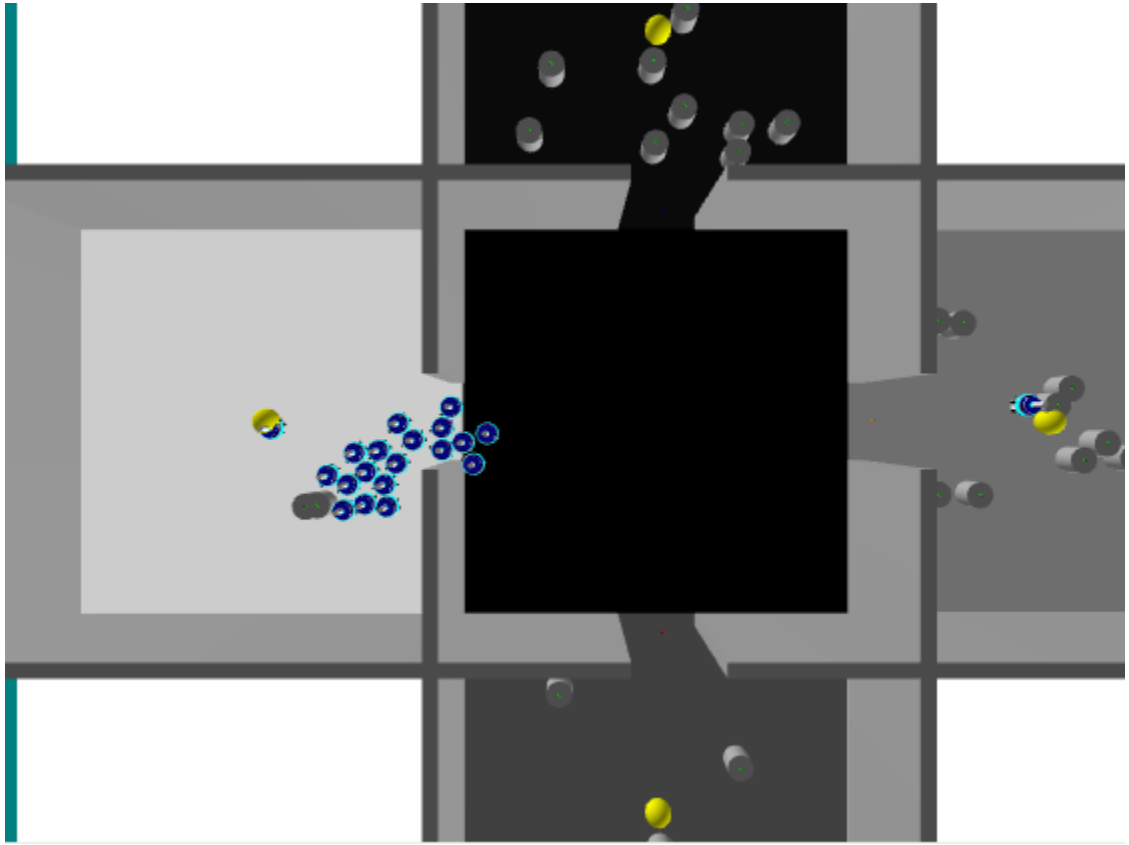
Main steps - Evaluate



Main steps - Gather & Sync



Main steps - Best Room



Analysis

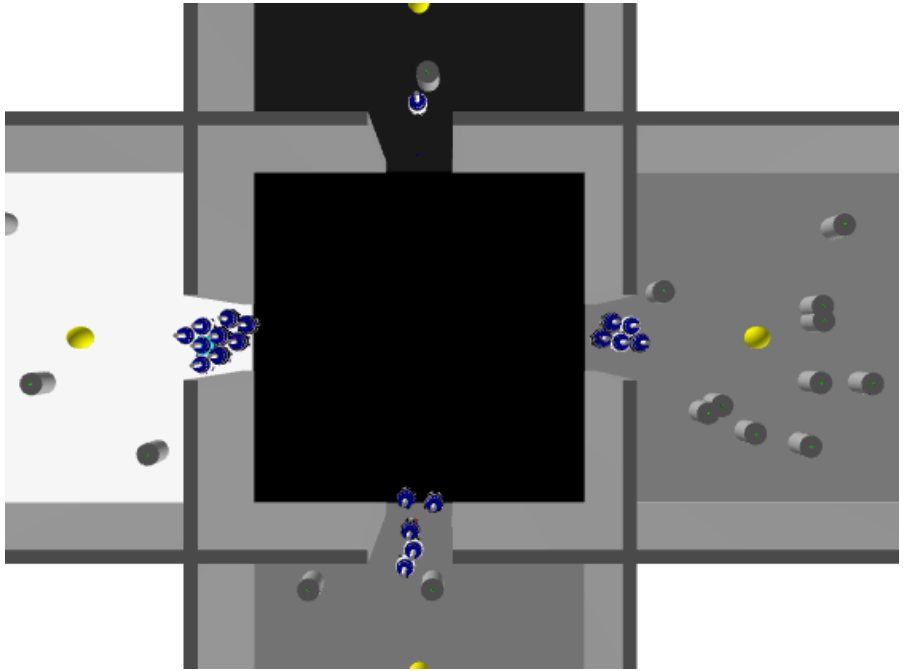
- analysed implementation with 10 experiments for multiple combinations of N (swarm size) and ρ (number of G robots/number of robots)
- total of 110 experiments

- 934 time steps on average
- 67/110 experiments where the best room was chosen
- 89.6% of robots on average were in the chosen room at the end of the experiment

Problems - diversification

- robots go to the nearest room at the beginning
  - some rooms might not have a robot of each type
  - some rooms might not have robots assigned to it

- solutions
  - assign
  - execute the main steps multiple times



Other problems

- score approximation
- swarm size
  - bigger -> robots get stuck more easily