7.11 Weekly Report

Technical Progress

Succesfully wrote the pipeline of **writing trajectory file and reload it** into grasshopper visualization.

Testing on Models

Collision Free Model:
Best Performance. But because of no collision, it's hard to see where agents will be stuck.

Social Force Model:
Agents are easily stuck and never continue to move, but I have not found out how to change params to fix it. **At least from this model I can tell where most probably the agents will be stuck.**
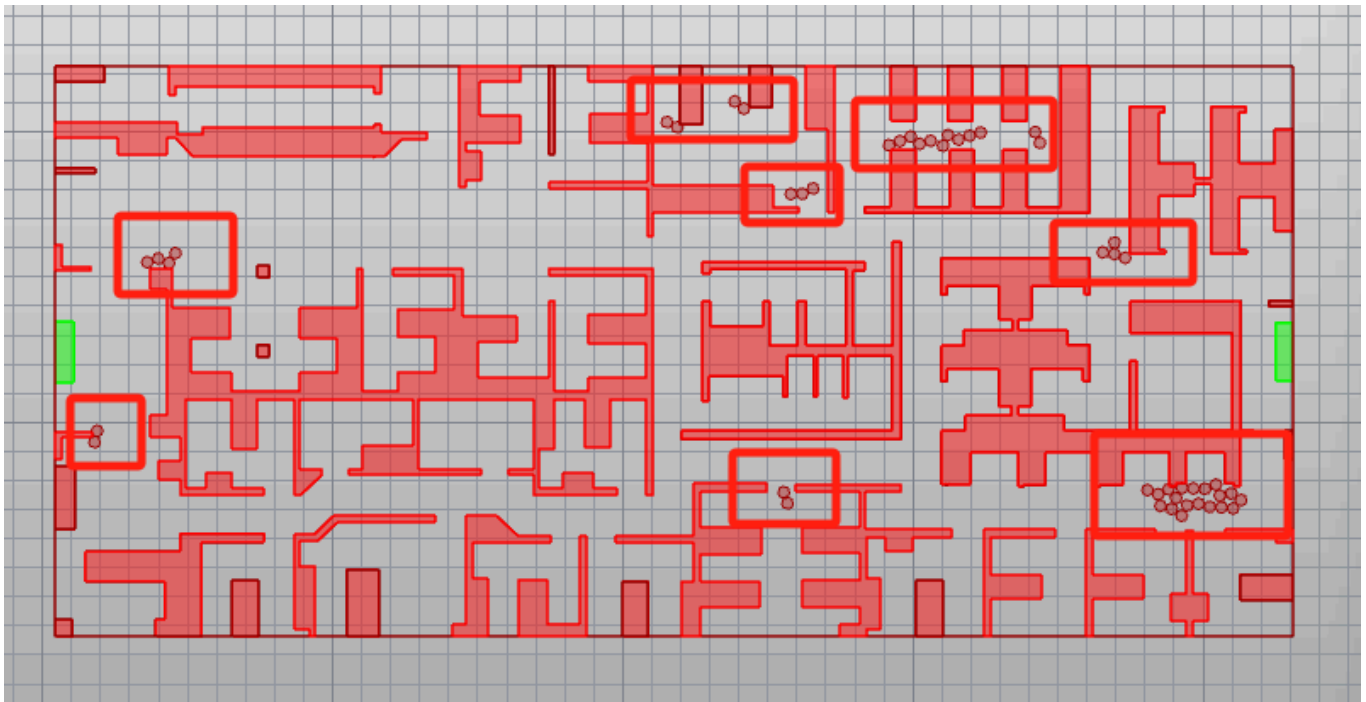
Agents tend to get stuck :
1. At large corners;
2. in multiple nested rooms (with two doors);
3. in meeting rooms with only a single passage in the middle;
4. obstacles near the exit.

Experiments design:

Because I have just set up the pipeline, I didn't set up a bunch of experiments.

I am thinking about doing the following:

1. Corner Congestion Issues

- **Parameters to Test**: Corner radius , corridor width expansion (1.5× normal width at turns), Corner geometry, obstacle clearance distance (3m radius), intermediate waypoint placement

2. Multi-Room Transition Problems

- **Parameters to Test**: Door spacing (≥3m), transition zone width (2× door width), door width progression (1.2m → 1.5m),Door alignment (offset vs. direct)

3. Single Corridor Bottlenecks

- **Parameters to Test**:
    - Main corridor width (2.4m),
    - auxiliary corridor addition (1.2m each side),

4. Exit Proximity Obstacles

- **Parameters to Test**: Obstacle clearance distance (5m from exits), exit width standards (≥1.5m single, ≥1.2m dual)