Tier 4 Final Project

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Obstacle detection

1. Loop laser ranges
2. Convert range to cartesian
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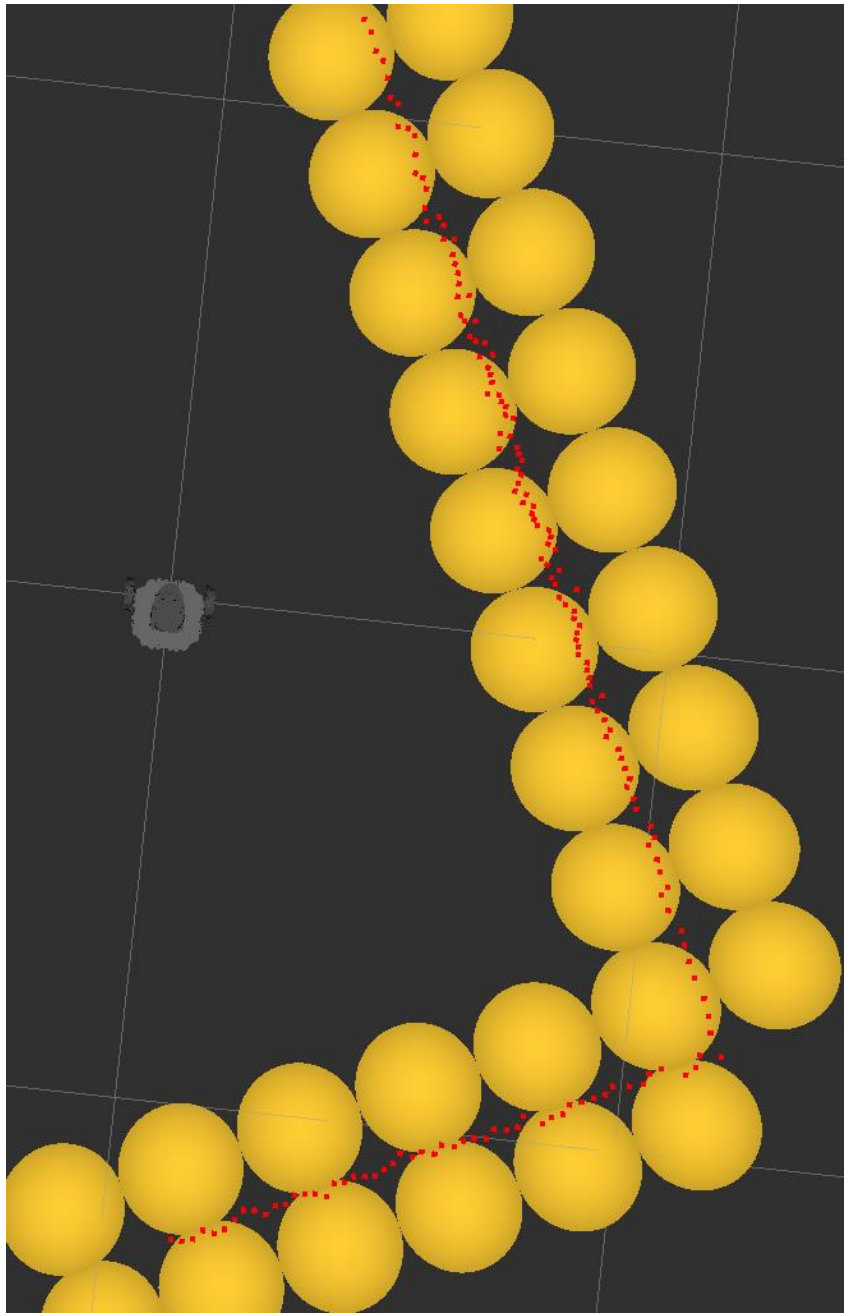
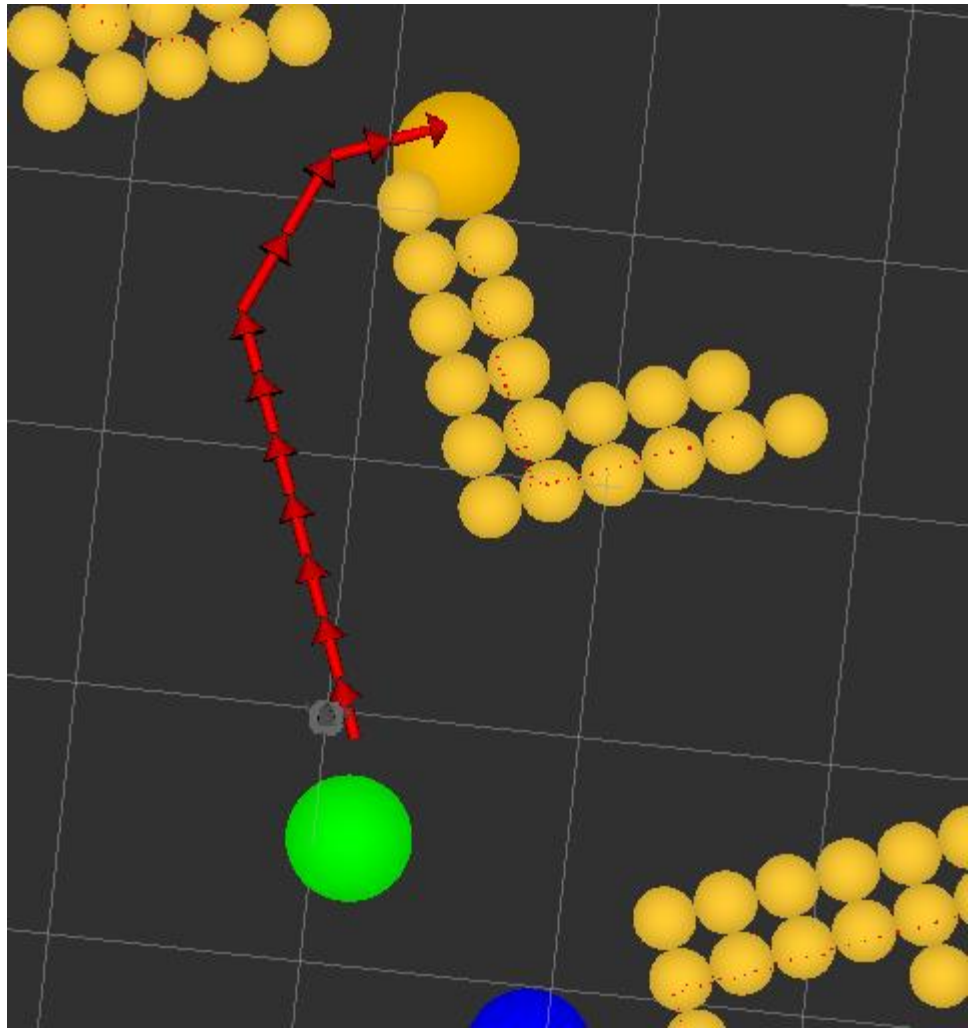


Path finding

- A* search algorithm
- f = h + g

1. Open list using min heap
2. Loop until open list is empty
3. Take current position with lowest f score from open list
4. Check if current position is end position
5. Expand children and calculate f = h + g
6. Add children to open list



Goal selection

- Nearest neighbor algorithm (greedy)

```
min_distance_reward = None
nearest_goal = None

for goal in goals:
    path_distance = calculate_path_distance(goal)
    distance_reward = path_distance * (1 / goal.reward)
    if distance_reward < min_distance_reward :
        min_distance_reward = distance_reward
        nearest_goal = goal

return nearest_goal
```

Thanks for listening