

# CrazyPractical Project

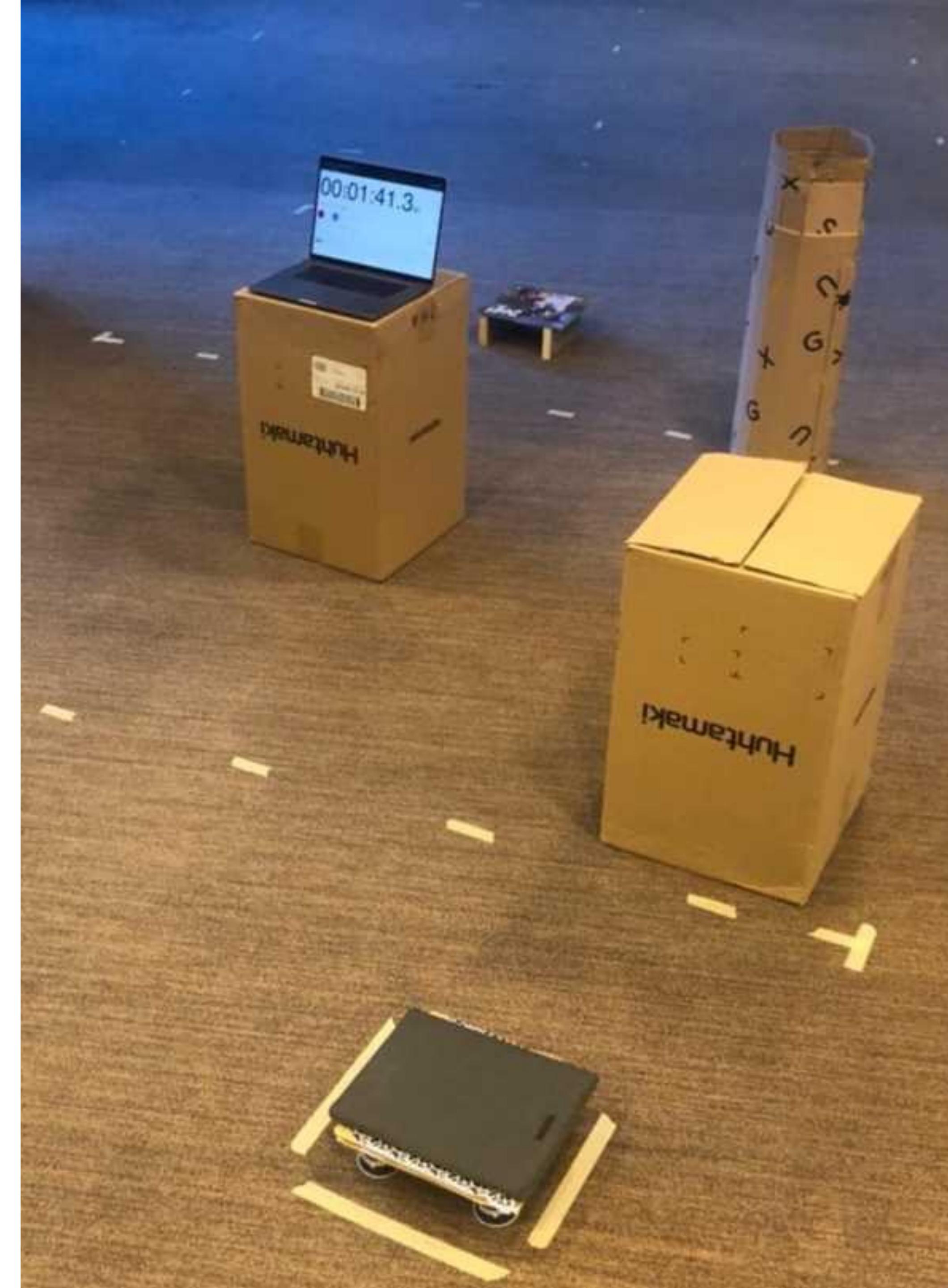
## Group 4

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# Experimental setup

## Environment layout

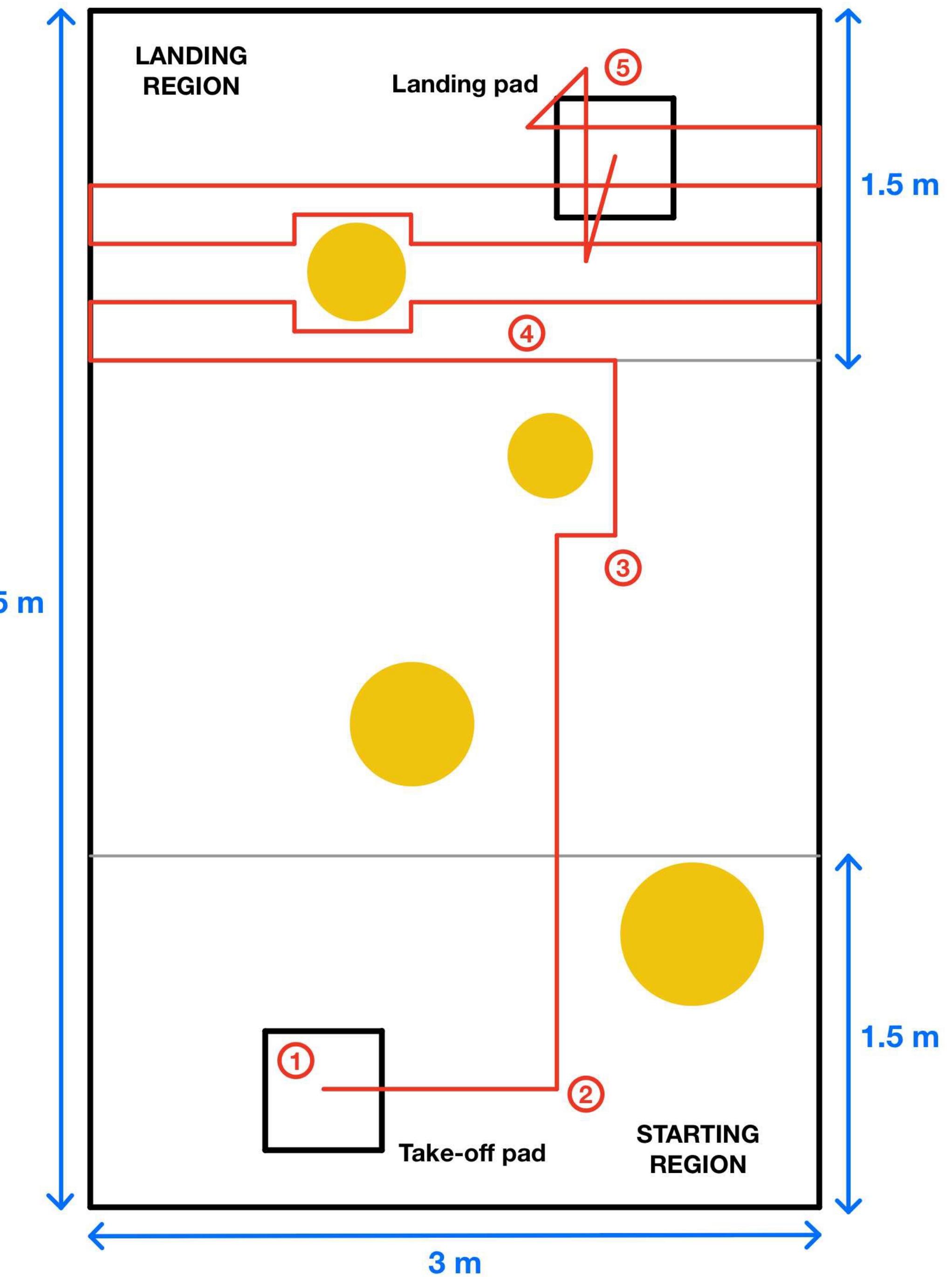
- The test arena has the **same dimensions** of the final arena;
- **Obstacles** were added in the central region and in the landing region;
- The **positions** of the obstacles and pads were **changed** multiple times.



# Strategy

Main steps of the algorithm

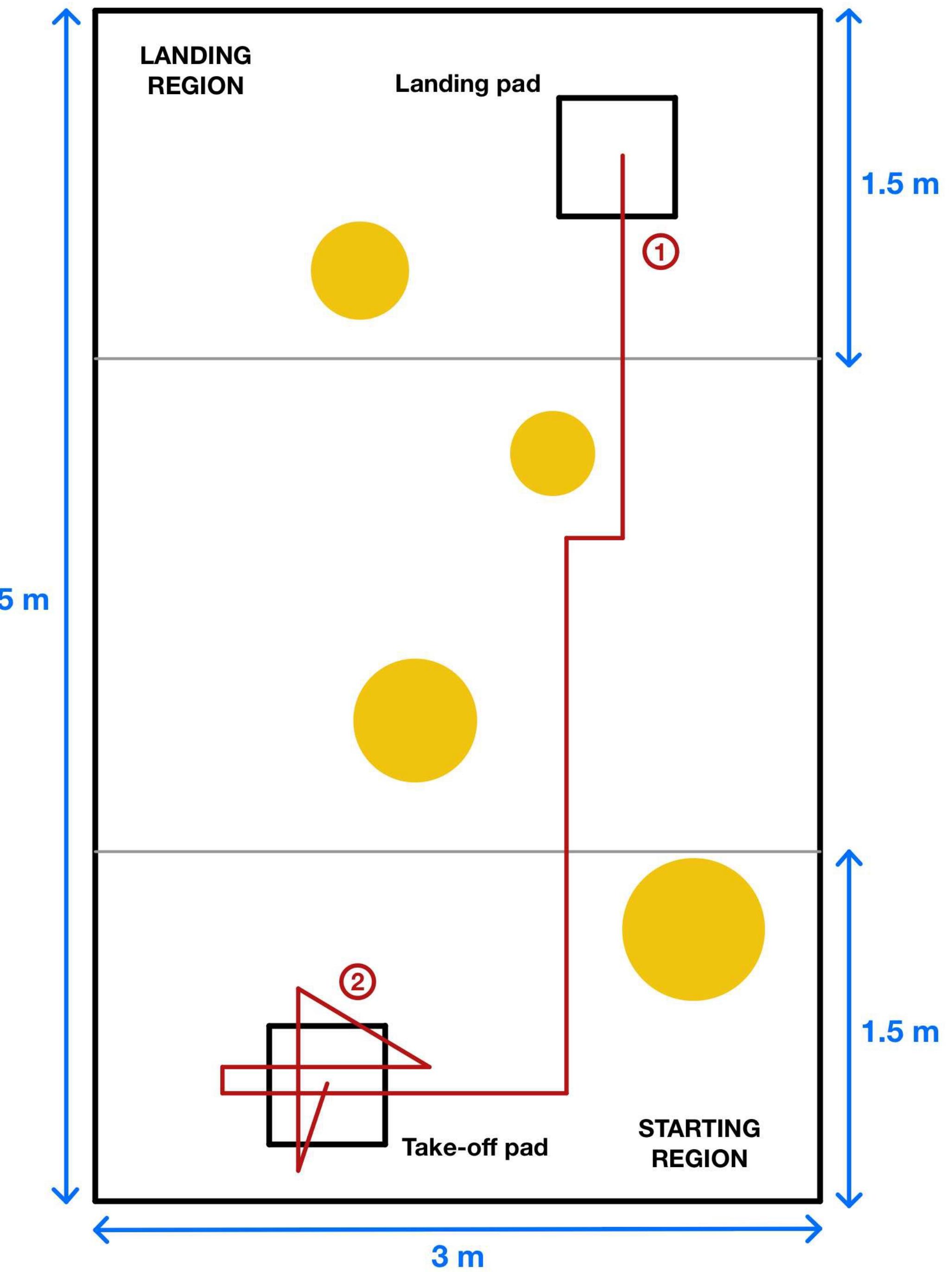
1. Take-off from the take-off pad;
2. Sweep to find a free path;
3. Avoid obstacles;
4. Sweep to find the landing pad;
5. Manoeuvre to localize the landing pad, and land.



# Strategy

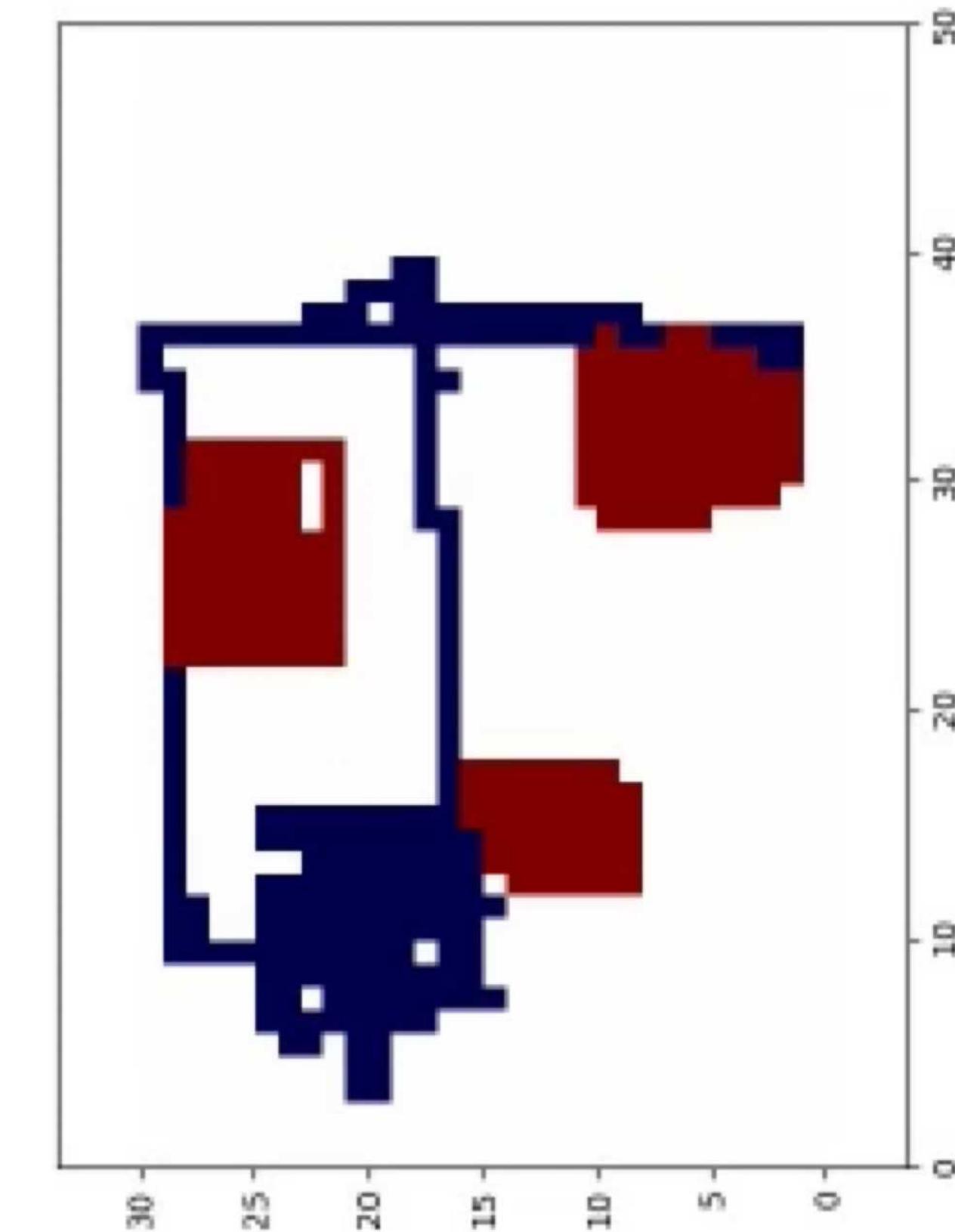
Main steps of the algorithm

1. Take-off from the landing pad, and choose an algorithm to **plan the return path** ( $A^*$ , forward path, re-discretise a new path);
2. **Manoeuvre** to localize the take-off pad, and **land**.



# Results and Statistical Analysis

| Obstacle avoidance | Landing - landing pad | Landing - take-off pad | Time limit respected | Average time taken |
|--------------------|-----------------------|------------------------|----------------------|--------------------|
| 10/10 trials       | 9/10 trials           | 8/10 trials            | 8/10 trials          | 1:51 minutes       |



Thanks for your attention...  
We are ready for take-off!