

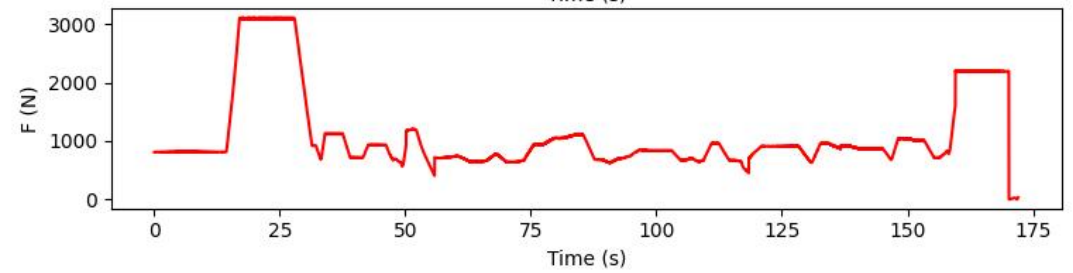
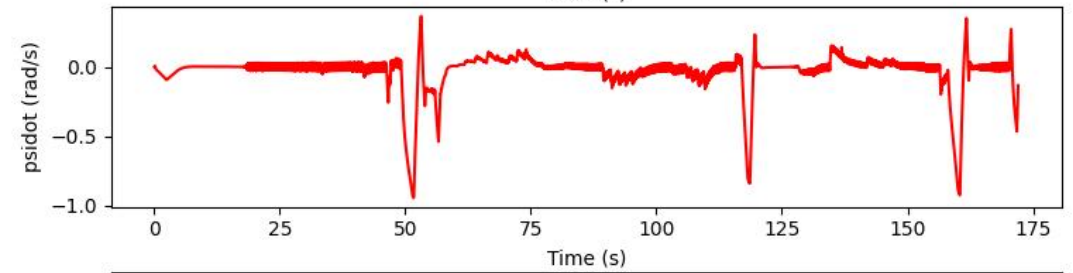
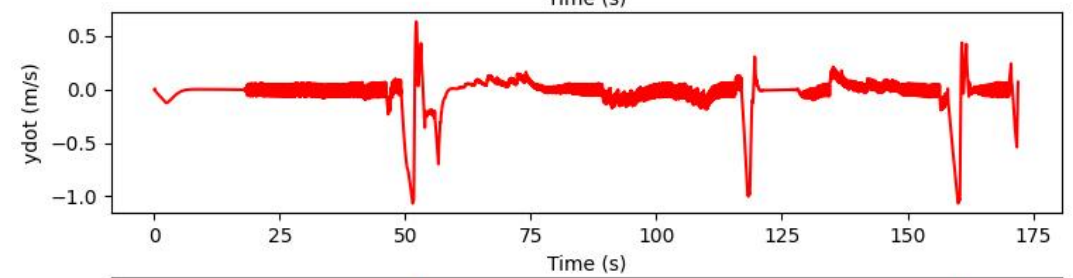
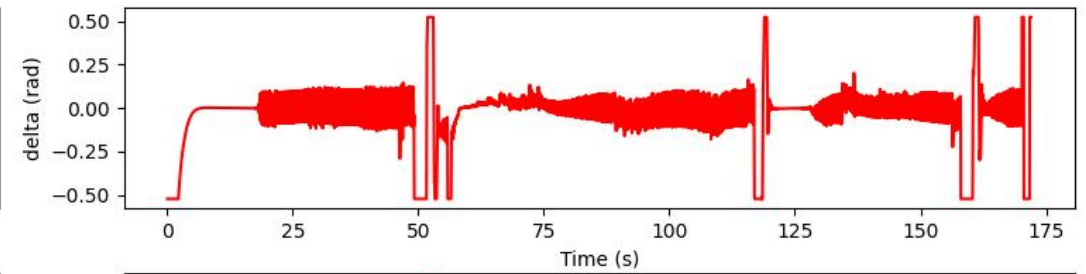
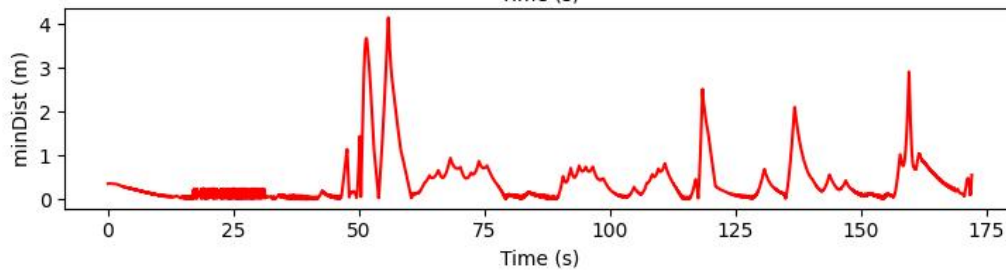
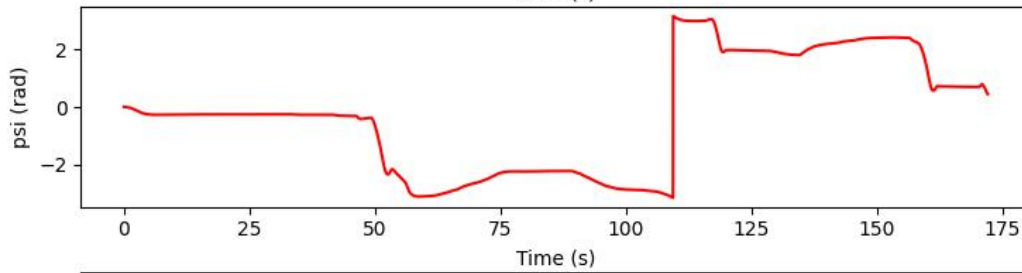
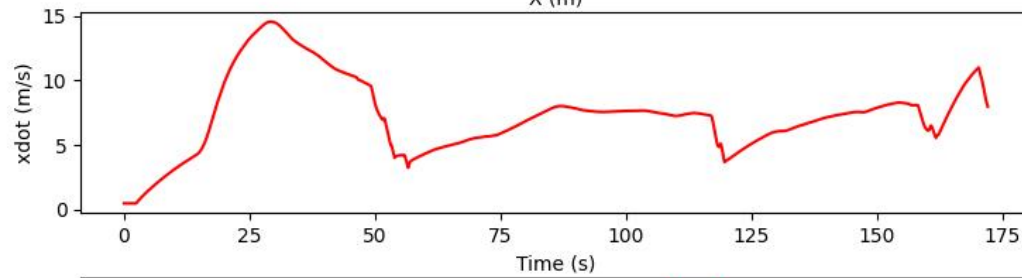
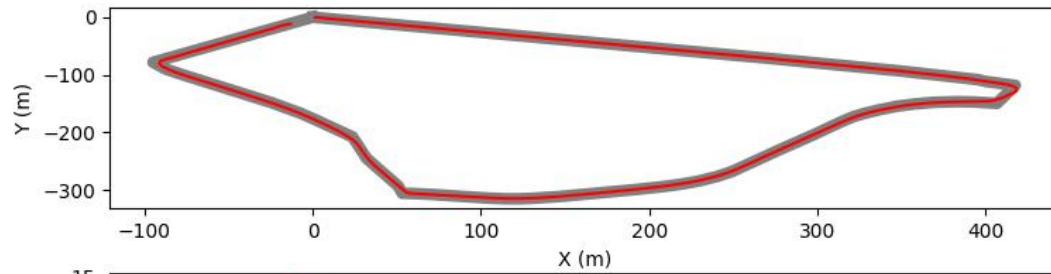
LQR Results



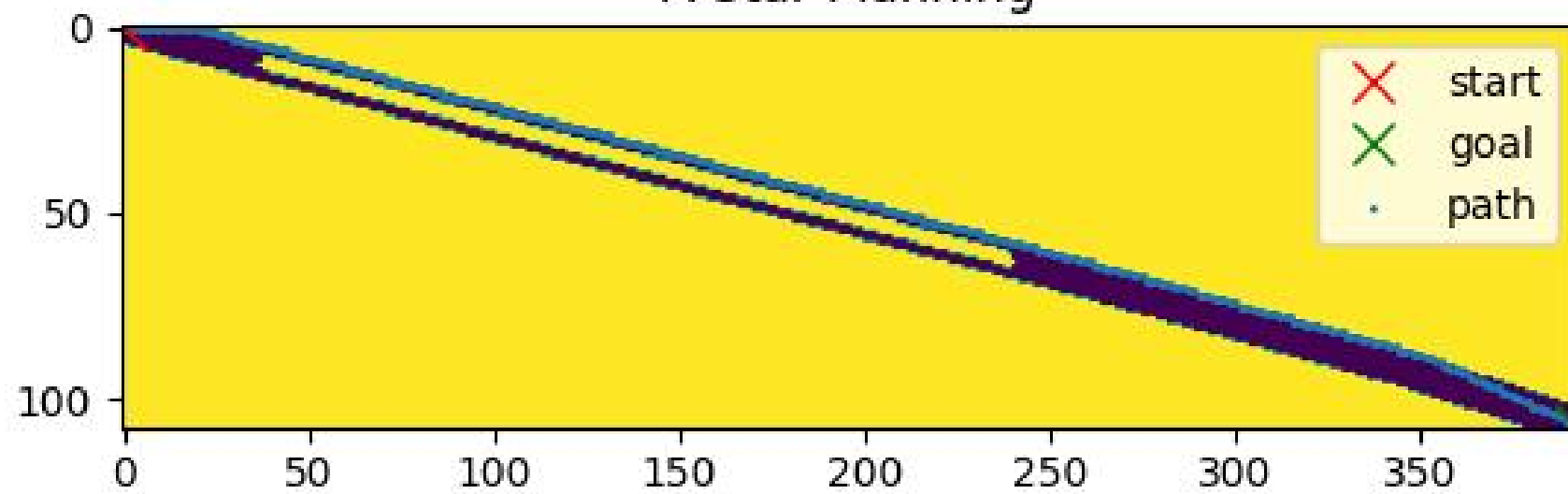
Console - All

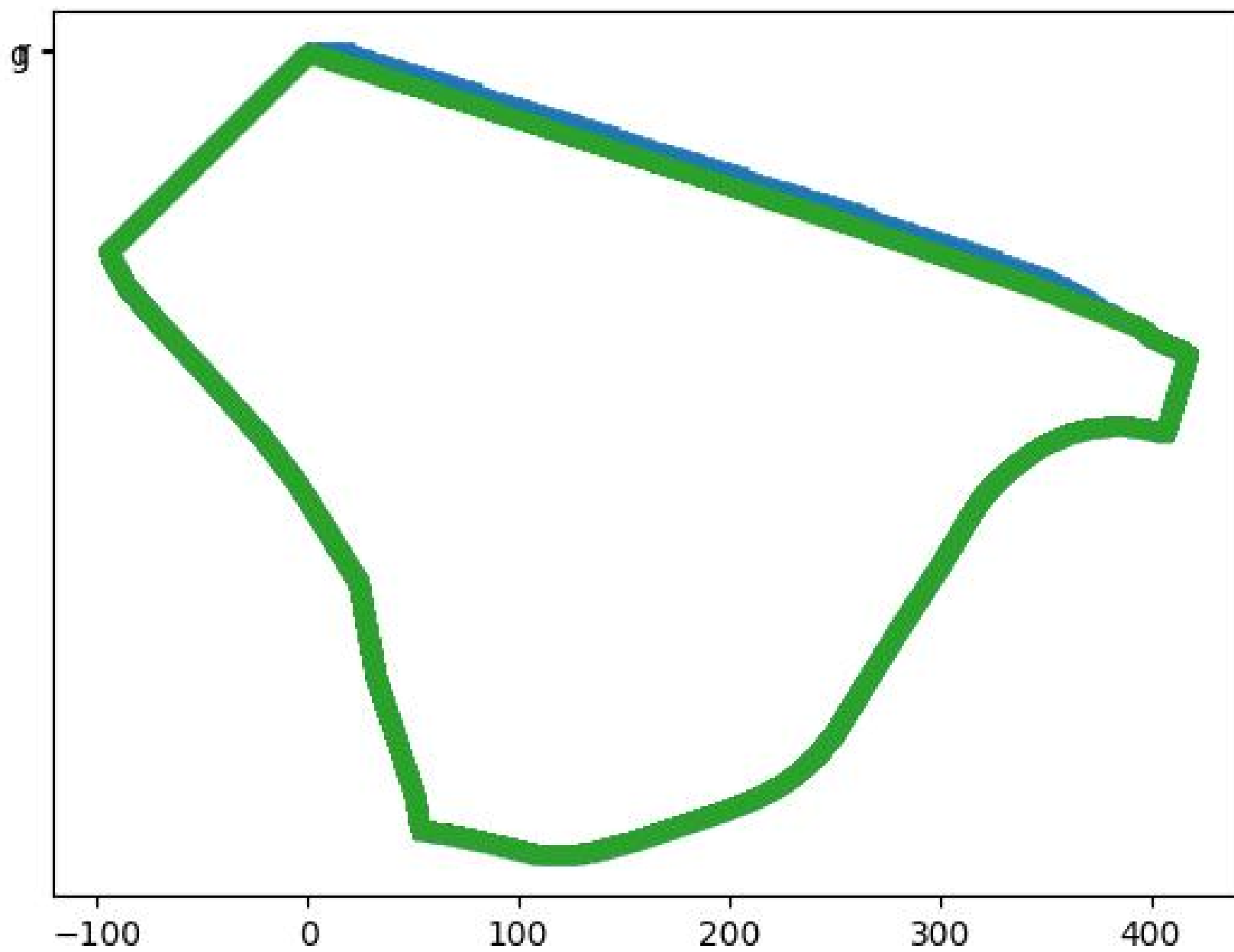
```
INFO: main: Starting controller: python.exe -u main.py
DEPRECATION: Robot.getDisplay is deprecated, please use Robot.getDevice instead.
DEPRECATION: Robot.getDisplay is deprecated, please use Robot.getDevice instead.
INFO: main: Starting controller: python.exe -u main.py
DEPRECATION: Robot.getDisplay is deprecated, please use Robot.getDevice instead.
DEPRECATION: Robot.getDisplay is deprecated, please use Robot.getDevice instead.
Evaluating...
Score for completing the loop: 30.0/30.0
Score for average distance: 30.0/30.0
Score for maximum distance: 30.0/30.0
Your time is 172.032
Your total score is : 100.0/100.0
total steps: 172032
maxMinDist: 4.147788455584971
.....
```

LQR Results

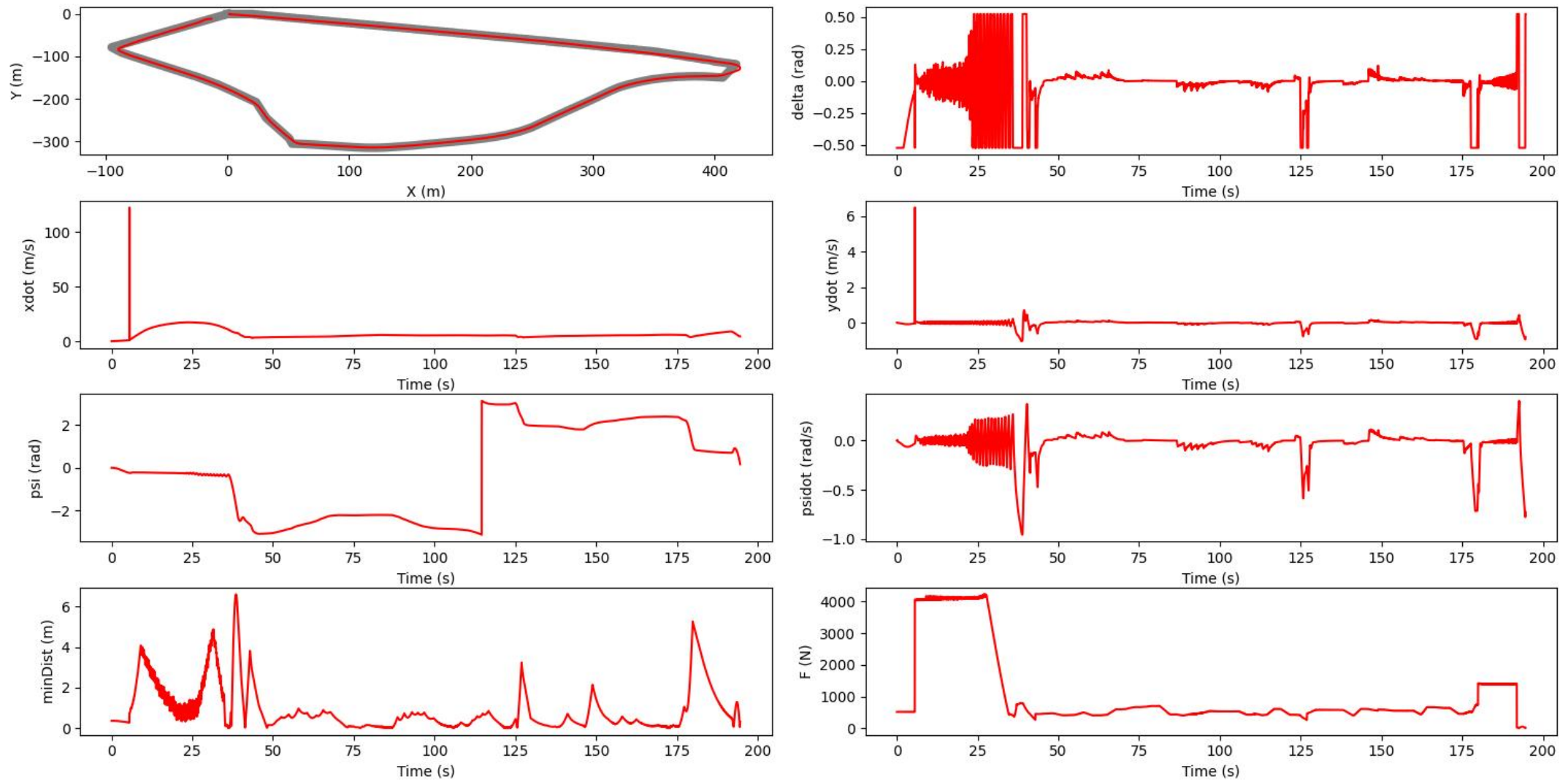


A Star Planning



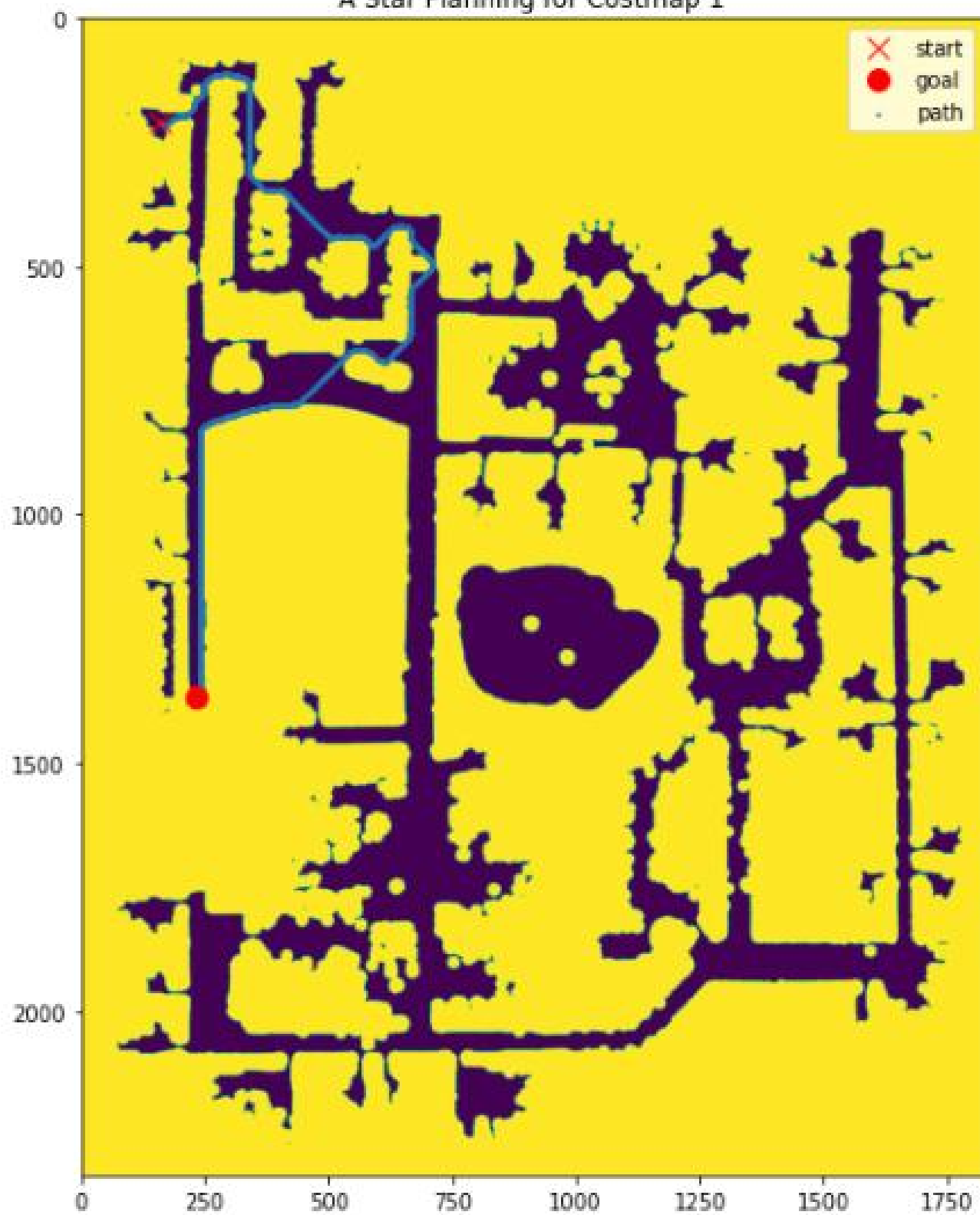


A star + LQR

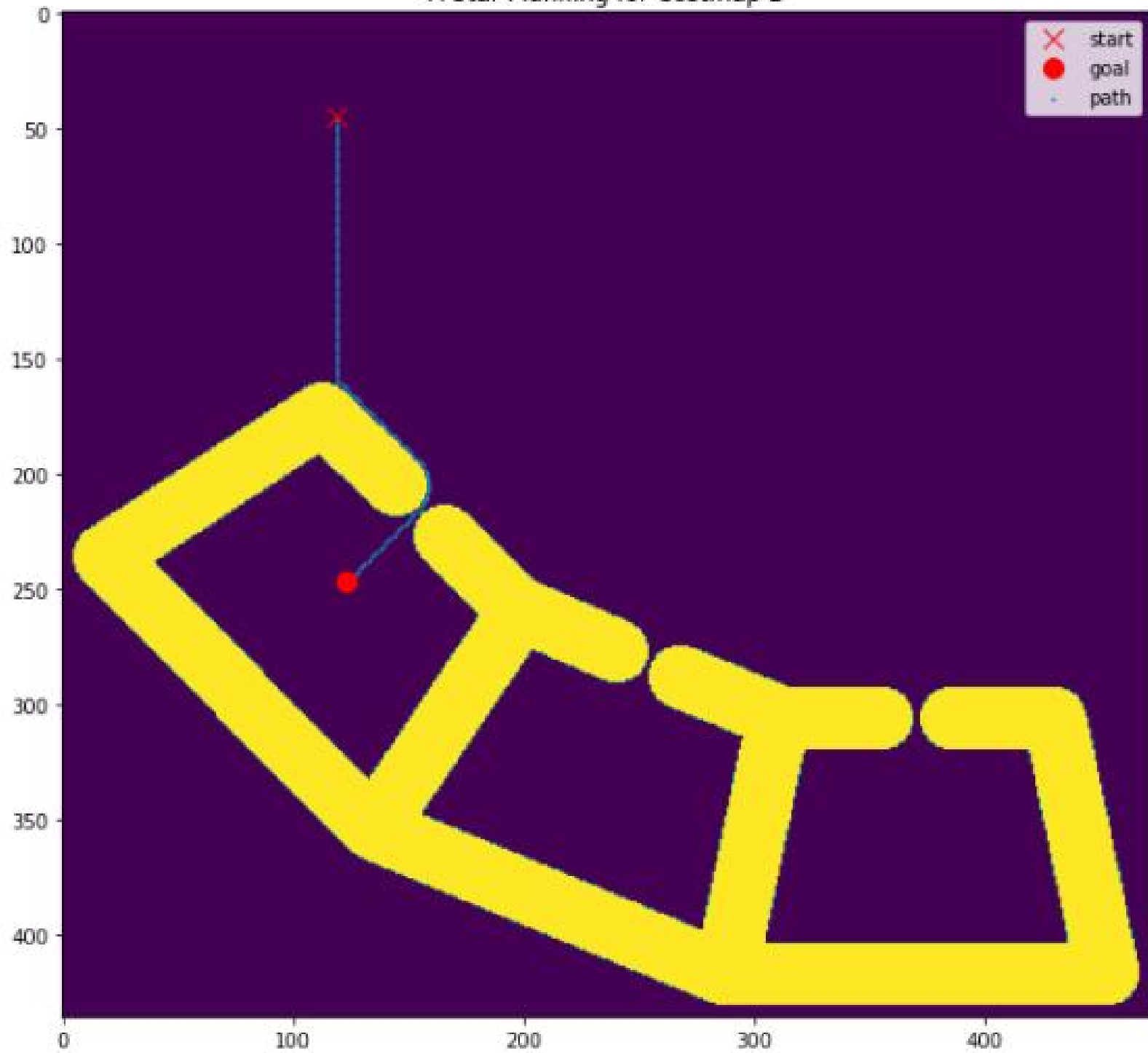


Time of completion less than 200 s

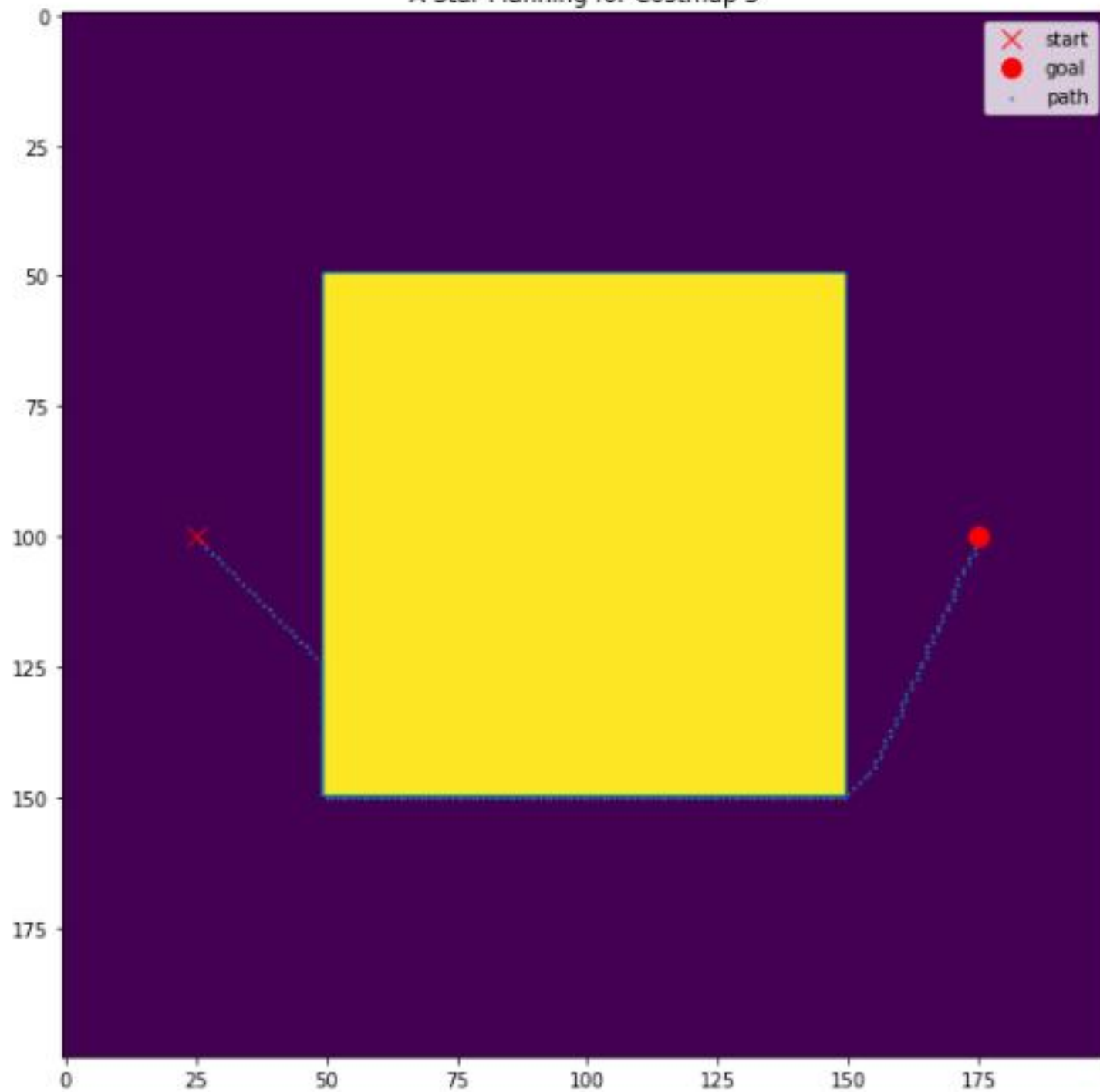
A Star Planning for Costmap 1



A Star Planning for Costmap 2



A Star Planning for Costmap 3




Results from Astar and LQR

File Edit View Simulation Build Overlays Tools Wizards Help

Simulation View

0:03:25:920 - 0.00x

- > WorldInfo
- > Viewpoint
- > TexturedBackground
- > TexturedBackgroundLight
- > DEF TESLA Robot
- > DEF OBSTACLE Robot
- > Floor
- > Road
- > Slide
- > Swing
- > Forest



Console - All

```
INFO: main: Starting controller: python.exe -u main.py
INFO: obstacle_controller: Starting controller: python.exe -u obstacle_controller.py
DEPRECATION: Robot.getDisplay is deprecated, please use Robot.getDevice instead.
DEPRECATION: Robot.getDisplay is deprecated, please use Robot.getDevice instead.
DEPRECATION: Robot.getDisplay is deprecated, please use Robot.getDevice instead.
[[0 0 0 ... 1 1 1]
 [0 0 0 ... 1 1 1]
 [0 0 0 ... 1 1 1]
 ...
 [1 1 1 ... 0 0 0]
 [1 1 1 ... 0 0 0]
 [1 1 1 ... 0 0 0]]
map size (108, 393)
reach goal
path length 393
total steps: 194624
maxMinDist: 6.595911364654609
avgMinDist: 0.8986909304805176
```