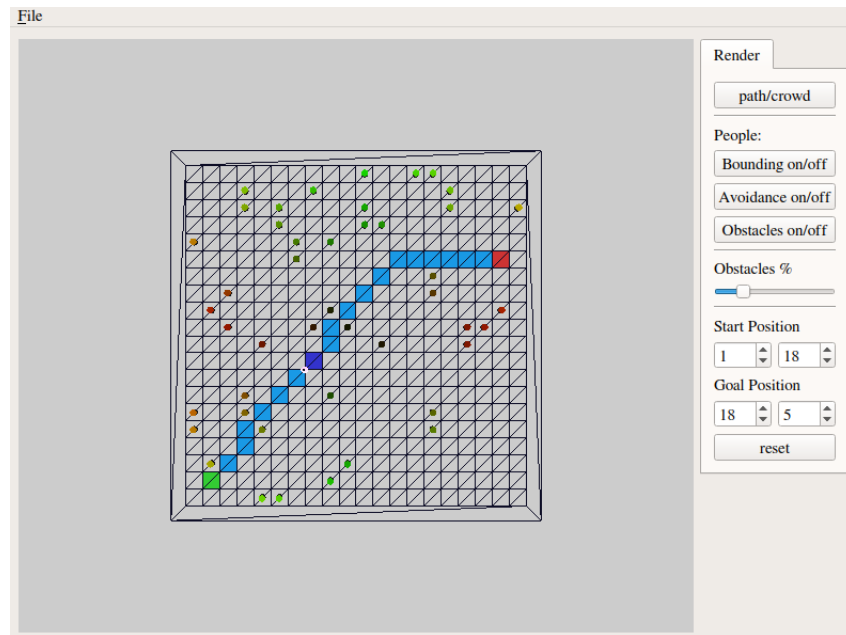# Crowd Simulation Project Report

Alberto Jovane

January 2019

1 Interface

The program presents a basic interface whit different options. Two main view are available: one for path finding scenario, and another for crowd collision scenario (path/crowd button).

There are some other options available:

- Bounding on/off: to show or hide the bounding box of the agent.

- Avoidance on/off: to activate the Sterling obstacle avoidance, and to show the two look ahead points in front of each agent.

- Obstacles on/off: to activate and deactivate the obstacles in the scene. (note that, even if not visible, the obstacles are considered anyway in the A* algorithm computation).

- The percentage of obstacles in the next scene (still need optimization).

- And the definition of the starting and ending cell of the path of A* on the next restart.

2 Code

The agent movement and local movement are all managed inside the "prsanimation" file. There are 3 types of update: a) one with collisions, b) one with collision and obstacle avoidance, and c) one for following the waypoints on the path.
In this file it is also implemented the smooth change of direction of the agent orientation.

The "glwidget" file manage all the visualization, the uploading of models, and keep all the important variable of the system.

The grid and the A* algorithm are both implemented in the "groundgrid" file.

3 Final notes

The interface is basically working, but there are still some problems that causes crashes. So sometime is necessary to run again the application.
In order to test some functionality it might be necessary to tune some parameter or changing some variable directly in the code, like changing the cal3d model.