

Wall Following Navigational Algorithm

The wall following algorithm as described in this paper - [Here](#) describes how a robot can walk along a wall without running into obstacles. The robot utilizes a differential drive system with three wheels. It also has a camera mounted that can detect obstacles and based on those obstacles determine the path to take. Based on the images taken by the camera, Image processing was done to determine how far the wall was away from the robot.

Wall-follow Algorithms

The wall-following control problem is characterized by moving the robot along a wall in a desired direction while maintaining a constant distance to that wall. This can be the case in the following situations.

2.3.1 Following an unknown wall

When there is little or no knowledge about the environment, the trajectory may be specified as 'follow the wall on the right until the first doorway'. When world modeling is the specific goal of the robot, it may be necessary to follow a wall to model it completely.

The position of the robot can be calculated by means of dead-reckoning.

2.3.2 Following a known wall

When the trajectory of the robot has been planned, it can be followed by means of dead-reckoning. However, dead-reckoning methods suffer from accumulating errors. A way to keep these errors small is by tracking a wall [26]. The planning must include the availability of walls in the route description in that case [27]. This is the reverse of the previous case: now the position of the wall has to be known accurately

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Using these two aspects of wall following, the results were favorable - [Video](#)