

Autonomous Path Finding Robot

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Abstract— This paper presents the detailed steps for designing and developing an autonomous robot. Autonomous robot creation has been a hot topic in the AI field. With recent technological developments, autonomous robots are gaining growing interest around the globe, and there are a number of ongoing research and development initiatives in both industry and academia. Location of obstacles in complex ground system is unknown. Route finding in such environment is actually really hot problems for robots. In this paper we present the design and implementation of a multi-sensor-based route to find autonomous robot framework for exploration. With the goals of seeking direction in a complex terrain environment with different obstacles, a novel path finding method integrating line tracking and obstacle avoidance algorithms is proposed and implemented. Experimental results indicate that our robot system with our path finding algorithm can effectively solve path finding problem in complex ground environment and avoid collision with the obstacles

I. INTRODUCTION

Automated robots have been a long and interesting area of research, one area of practical importance is an automatic robot course. We need a good algorithm guiding path for the given application. Much research has been done on this subject and has shown promising results. This work aims to get a first taste of the topic and other developments in robotics. Our main goal is to find the correct and safe way to the destination to avoid all obstacles and to give live feed on your smartphone phone. For example, if the robot is held at a specific location in a room and the coordinates of a particular destination are given, it should move in that direction, thus avoiding all obstacles in its way and reaching its destination. Within this project we have Arduino UNO . We used sensors in the provided path to direct the robot and to coordinate and provide live feed for the path.

II. PROBLEM STATEMENT

An independent robot is such a machine who has no in advance information about route and which needs a few calculation to be utilized for making the headings for route. Way arranging accomplishes something

comparative if there should be an occurrence of self-ruling robots with the utilization of electronic sensors and control framework (calculation). The field of automated mapping addresses the issue of robot route where the utilization of GPS isn't accessible or conceivable. It considers the capacity of a robot to review its environment, assemble a virtual guide and move along an ideal way. The robot utilizes Laser Detection and Ranging (LIDAR), ultrasound and different sensors for information assortment to comprehend its environment. This information is utilized to fabricate a virtual guide of its environment and fabricate a way on the fly as the robot continues. This is alluded to as Mapping. A robot that explores utilizing this guide must have the option to precisely figure its situation concerning the tourist spots in the guide, and find itself right now. This is known as Localization. To move along an ideal way both mapping and restriction is important.

III. MOTIVATION

Autonomous robotics is one of the most key topics of this generation of research. It has a wide range of applications, such as construction, manufacturing, waste management, space exploration, and military transportation. One of the main areas of research, in order to achieve successful autonomous robots, is path finding. Path finding in robotics is defined as navigation that shall be collision free and most shortest or optimum for the autonomous vehicle to manoeuvre from a source to its destination. This thesis concentrates on building a path finding algorithm for an all-terrain vehicle (ATV) used for travelling in an open field or forest. The novelty of this algorithm is that it does not simply create a path between a source to its destination, but it makes sure that the vehicle covers the entire field area when navigating from the source to its destination. An autonomous robot is such a person who has no beforehand data about navigation and which needs some algorithm to be used for creating the directions for navigation. Path planning does something similar in case of autonomous robots with the use of electronic sensors and control system (algorithm).

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