ANALYSING AND IMPROVING PATH PLANNING BASED ON LAGRANGE POLYNOMIAL AND DESIGNING METHOD FOR DYNAMIC OBSTACLE AVOIDANCE OF AN AUTONOMOUS GUIDED VEHICLE

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgment is made in the thesis.

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ABSTRACT

ANALYSING AND IMPROVING PATH PLANNING BASED ON LAGRANGE POLYNOMIAL AND DESIGNING METHOD FOR DYNAMIC OBSTACLE AVOIDANCE OF AN AUTONOMOUS GUIDED VEHICLE

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The purpose of this thesis work is to analyse and improve the path planning based on Lagrange Polynomial and design a method for obstacle avoidance. The path planning is used on Automated Guided Vehicle which has been developed in SGU. The Lagrange Polynomial which that will be used are 2nd order and 3rd order. The form and the shape of the path will be tested and analysed to make an efficient path planning. The experiment will focus on the shape and execution of the path. The testing will be done using V-REP simulation which is also capable to simulate the scenario of obstacle avoidance. The result of the simulation will later be implemented in the AGV. The result of the experiment will be used as a base for improvement for path planning in the AGV.

Keywords: path planning, Lagrange polynomial, obstacle avoidance, simulation

DEDICATION

I dedicate this work for my family, teachers and all my friends

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