سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

سامية محمد مصطفى

بالرسالة صفحات لم ترد بالأصل

VISION-BASED NAVIGATION FOR A MOBILE ROBOT

BY
Eng. DOAA ABD EL-FATAH ASHMAWY

A thesis submitted to
Shoubra Faculty of Engineering, Zagazig University, Benha branch in partial fulfillment for the degree of
MASTER OF SCIENCE
in
Electronic Engineering

Under the supervision
of

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ABSTRACT

Robot navigation is defined as guiding a mobile robot to a desired destination or along a desired path in an environment characterized by a set of distinct objects, such as obstacles. Obstacles are defined as objects that can block the movement of the robot. Obstacle avoidance is one of the most critical factors in the design of autonomous vehicles such as mobile robots.

The aim of this work is to develop an efficient, robust, map-less navigation algorithm based on computer-vision principles. This navigation algorithm enables the robot to avoid collision with obstacles existing in an indoor environment (e.g. chairs, desks, file cabinets, persons, etc.) and determining which direction (Right, Left, Forward, or Stop) the robot should take.

The developed algorithm is programmed using MATLAB 6 image processing toolbox.

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