CONFIGURATION AND IMPLEMENTATION OF ROBOT OPERATING SYSTEM ON ODROID BASED MECANUM WHEELED ROBOT FOR SIMULTANEOUS LOCALIZATION AND MAPPING

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 acknowledgement is made in the thesis.

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ABSTRACT

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Mecanum wheeled robots have been studied and developed at SGU. Various results were obtained from mechanical, electrical and software development point of views. The progress result on mechanical point of view is one of the weakest aspect. This is found originally on the design of mecanum wheel. The wheel designed was not rigid and the manufacturing process was not precise. The advancement of processor's power are increasing yearly. The processor of previous mecanum wheel robot was dual core Intel i5-480M on a laptop. This computing platform was either not flexible or the dimension is too big. The software application was developed for basic robot movements purpose. The following development, aims to improve the wheel mechanical design and manufacturing, and to provide feature rich electronics and software platform. ODROID XU3 and ROS (Robot Operating System) are used to control the robot system.

Keywords: Mecanum wheel, Robot Operating System, ODROID XU3, flexible platform, Microsoft Kinect

DEDICATION

I dedicate this work to my beloved family

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