INTEGRATION AND DESIGN IMPROVEMENT OF SGU TRANSFORMER ROBOT (T-BOT) BODY AND ARM SUBSYSTEM

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

INTEGRATION AND DESIGN IMPROVEMENT OF SGU'S TRANSFORMER ROBOT (T-BOT) BODY AND ARM SUBSYSTEM

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The purposes of this thesis project are to integrate the body and arm subsystem of the SGU's Transformer Robot (T-Bot) and to improve its design. However, the design improvement was limited for the transformation process of the T-Bot.

Since there was no report published by previous SGU's T-Bot developers, conducting a series of tests was used as the methodology to carry out this thesis project. Through the tests, it was found that the original SGU's T-Bot had several mechanical design errors, which mainly on the arm subsystem.

A PID position control was also developed in this thesis with the purpose to lock the arm for the T-Bot's 4 wheel maneuvering process. The test of the PID position control was conducted by using a scaled model of the T-Bot. The results of the tests show that PID position control is suitable for locking the T-Bot's arm application.
Keywords: T-Bot, integration, design improvement, PID position control

DEDICATION

I dedicate this works for my parents, my sister, and all of my friends

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