DEVELOPMENT OF A LOOPING BEHAVIOR TREE BASED INDOOR LOGISTIC AUTONOMOUS MOBILE ROBOT IN ROBOT OPERATING SYSTEM 2

By

Hanzen Clementius Hartanto
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SWISS GERMAN UNIVERSITY
The Prominence Tower
Jalan Jalur Sutera Barat No. 15, Alam Sutera
Tangerang, Banten 15143 - Indonesia

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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.

Hanzen Clementius Hartanto
Student

17 July 2023
Date

Approved by:

Dr. Rusman Rusyadi, B. Sc., M. Sc.
Thesis Advisor

17 July 2023
Date

Dr. Maulahikmah Galinium, S. Kom., M. Sc.
Dean

Date

ABSTRACT

DEVELOPMENT OF A LOOPING BEHAVIOR TREE BASED INDOOR LOGISTIC AUTONOMOUS MOBILE ROBOT IN ROBOT OPERATING SYSTEM 2

By

Hanzen Clementius Hartanto
Dr. Rusman Rusyadi, B. Sc., M. Sc. Advisor

SWISS GERMAN UNIVERISTY

The implementation of Behavior Trees (BTs) has branched out from its origin as an artificial intelligence in video games to robotics and other fields in which a simple form of decision-making capability is required. This can be implemented in autonomous mobile robots (AMRs), in which the switching of tasks can be done with BTs, thus improving what tasks can be done with the AMR without much complexity, allowing for more AMRs with more capabilities. This thesis focuses on the utilization of BTs as an industry-ready software module without requiring to compile and build the program after every modification. This is done by developing a BT that acts as the main looping program of the robot from which every instruction is made with BT plugins.

Keywords: Autonomous Mobile Robot, Behavior Tree, Looping, Behavior Tree Plugins.

DEDICATION

I dedicate this work to my family, my university, and the future of the Mechatronics field of study.

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