DEVELOPMENT OF ARDUINO BASED CONTROLLER FOR TENNIS BALL MACHINE

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain

Sarjana Teknik

By:

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FACULTY OF ENGINEERING

MECHANICAL ENGINEERING STUDY PROGRAM

CIKARANG

MAY 2023

THESIS APPROVAL

DEVELOPMENT OF ARDUINO BASED CONTROLLER FOR TENNIS BALL MACHINE

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Approved By

Nanang Ali Sutisna, M.Eng	**Dr. Eng. Lydia Anggraini, S.T., M.Eng**
Advisor Thesis	Head of Study Program Mechanical Engineering

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The Panel of Examiners declare that the undergraduate thesis entitled **"DEVELOPMENT OF ARDUINO BASED CONTROLLER FOR TENNIS BALL MACHINE"** that was submitted by Mohamad Rafli Firzatullah majoring in Mechanical Engineering from the Faculty of Engineering was assessed and approved to have passed the Oral Examination on 17 May 2023

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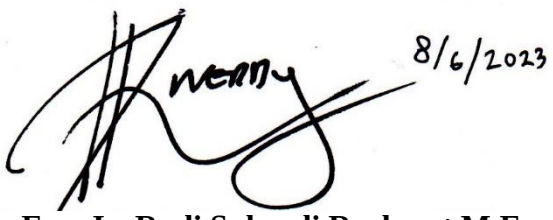

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ABSTRACT

The industrial revolution 4.0, also known as the industrial revolution that conceals collaborative manufacturing that cannot be separated from automatic technology or system automation, is presently entering Indonesia and the rest of the world. This automation technology has not been extensively used in tennis court sports. The use of automation technology is anticipated to make training easier for tennis court coaches and players. The goal of this final project is to make training easier and more comfortable for athletes by creating a tennis ball throwing machine with automatic system control. Several mechanical components, including an Arduino Uno, a DC motor, a BTS7960 driver, an HC-05 Bluetooth module, an IR sensor, an ultrasonic sensor, and a smartphone, are used to build this machine. The Arduino IDE and Arduino Bluetooth Controller Application are the programs used. The outcome of the work on this tennis ball throwing machine is a machine that can be controlled wirelessly using a Bluetooth connection on an Android smartphone and can be operated with different types of games depending on the athlete's degree of proficiency.

Keywords : Tennis Ball Machine, Arduino, BTS7960 Driver, Controller, DC Motor 755

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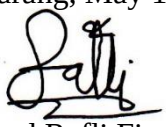
Cikarang, May 17 2023



Mohamad Rafli Firzatullah

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