

ABSTRAK

Muhammad Rizal Fahlevi (5215144162) “Sistem Buka-Tutup Kaca Helm Otomatis Dengan Voice Recognition Berbasis Arduino Uno”. Skripsi. Jakarta : Program Studi Pendidikan Elektronika, Fakultas Teknik, Universitas Negeri Jakarta. Juli 2019. Dosen Pembimbing, Drs. Pitoyo Yuliatmojo, MT. dan Dr. Muhammad Yusro.

Penelitian yang berjudul “Sistem Buka-Tutup Kaca Helm Otomatis Dengan *Voice Recognition* Berbasis Arduino Uno” ini bertujuan untuk merancang sistem yang diletakkan di helm kendaraan bermotor sehingga kaca helm tersebut dapat terbuka dan tertutup secara manual dan juga menggunakan perintah suara.

Hasil penelitian sistem buka tutup kaca helm otomatis ini dapat direalisasikan dengan penggabungan sub-sistem, diantaranya : Arduino Uno, Arduino Nano, Modul *Voice Recognition EasyVR 3.0*, Sensor Anemometer, Modul *Bluetooth HC-05*, *Buzzer*, *Toggle Switch*, Motor Servo dan Baterai Li-Po. Sistem Buka-Tutup Kaca Helm Otomatis ini bekerja berdasarkan beberapa kondisi diantaranya input suara dari pengendara dengan perintah suara “Buka”, “Tutup”, “Pagi”, “Malam”, input dari kecepatan angin pada kecepatan kendaraan 40 km/jam, juga kontrol manual menggunakan *toggle switch* yang menggunakan komunikasi Bluetooth. Ketiga input tersebut lah yang nantinya akan diproses oleh Arduino dan diteruskan kepada motor servo untuk menggerakkan kaca helm bagian dalam dan luar.

Kata-kata Kunci: Helm motor, Arduino Uno, Voice Recognition, Sensor Anemometer, Bluetooth HC-05.

ABSTRACT

Muhammad Rizal Fahlevi (5215144162) “Arduino Uno Based Automatic Helmet Visors Swiveling System Using Voice Recognition”. Essay. Jakarta : Education Study Program of Electronic Engineering, Faculty of Engineering, State University of Jakarta. July 2019. Supervisors, Drs. Pitoyo Yuliatmojo, MT. and Dr. Muhammad Yusro.

The main purpose of the research entitled “Arduino Uno Based Automatic Helmet Visors Swiveling System Using Voice Recognition” is to devise a system that have the ability to swivel a motorcycle helmet visors both manually and with voice command.

The result of this research is acquired by integrating all of the sub-system which consist of Arduino Uno, Arduino Nano, EasyVR 3.0 Voice Recognition Module, Anemometer Sensor, Bluetooth HC-05 Module, Buzzer, Toggle Switches, Servo Motors, and Lithium-Polymer Battery. The system works based on several conditions. Some of which are by using voice command said by the driver such as “Open”, “Close”, “Day”, and “Night”. Other condition that trigger the system is from the wind velocity on a moving motorcycl should it reach 40km/hour, and also this particular system has a manual control using toggle switch that connected to the helm by using Bluetooth connection. These conditions mentioned are the input signals that will be processed by arduino which will trigger servo motor to operate and swivel the helmet’s visors up and down.

Keywords: *Motorcycle Helmet, Arduino, Voice Recognition, Anemometer Sensor, HC-05 Bluetooth Module.*