Department of Electrical and Computer Engineering
North South University

Senior Design Project

Gesture Control Robotic Hand

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Faculty Advisor:
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Fall 2022

DECLARATION

This is to declare that this report is a hardware-based implementation and is self-contained for the purpose of submission as a part of the Senior Design course in summer 2018 at North South University and has not been used elsewhere for any other reason. The materials that are obtained from other source are duly acknowledged in this project. Any similarities, in wording, if found to other papers, which has not been cited, is a subject of pure coincidence.

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Approval

The senior Design Project entitled “***Gesture Control Robotic Hand***” by

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has fulfilled all the criteria required for the completion of bachelors in Science Electrical and Electronic Engineering program at NSU on January 2023.

Supervisor’s Signature

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Department Chair’s Signature

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Acknowledgement

We would like to begin with our gratitude towards North South University's Department of Electrical Engineering and Computer Science for providing us with the platform to showcase our design capabilities, troubleshooting ability and implementation of theoretical knowledge fed to us through the core courses designed in the program and ultimately leading to the completion of senior design project.

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Gesture Control Robotic Hand

Abstract:

Technology have boomed more in last few years. Robotic hand can be a great development for the disabled people. Robotics have advanced over the years in modern era. The goal of this project is to design a robotic arm which can help disabled people in their daily activities. A gesture controlled robotic arm can help the disabled people to live a normal life. A gesture controlled wireless robotic hand for disabled people could be an essential device for those who have problems using their hands due to injury, illness, or disability. If a disabled person uses a robotic hand, then it will make his life easier than before. This gesture controlled robotic hand is a wireless system that can communicate information between two point and it is not physically connected to any electrical product. The robotic hand movement is done by servo motors positioned on each finger on the robotic hand that rotates according to a person's hand gesture detected by flex bend sensors positioned on each person's fingers. Basically, it will convey movement information from a real person's hand to the robotic arm wirelessly. The robotic arm copies the patient's hand movement and gestures in real time. Arduino IDE software is used to program the system into the Arduino Uno board. This software has its own library for input and output interfacing. The designed system can be used to grab and move things. This robotic hand can help them to perform a wide range of activities. He can grab heavy thing, he can do his daily works as before without the help of others, he can work outside with this hand as before. He can do simple everyday tasks like drinking, and eating to complex tasks like using a computer. This device can make the lives of the disabled people more comfortable.