Department of Electrical and Computer Engineering
North South University

Senior Design Project 499B

Smart Phone Control Robotic Arm

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Faculty Advisor :

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Lecturer

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North South University.

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LETTER OF TRANSMITAL

February’2024

To

Dr. Rajesh Palit

Chairman,

Department of Electrical and Computer Engineering

North South University, Dhaka.

Subject: Submission of Capstone Project Report on “Smartphone Control Robotic Arm.”

Dear Sir,

With due respect, we would like to submit our Capstone Project Report on “Smart Phone Control Robotic Arm” as a part of our BSc program. The report deals with smartphone control robotic arm which is designed to work on predetermined commands and has ability to move according to the mobile app specification. This project was very much valuable to us as it helped us gain experience from practical field and apply in real life. We tried to the maximum competence to meet all the dimensions required from this report. We will be highly obliged if you kindly receive this report and provide your valuable judgment. It would be our immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours,

Sarah Al Aiz

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ECE Department
North South University, Bangladesh

Md Ibnul Hasan Abir

.....

ECE Department
North South University, Bangladesh

APPROVAL

Sarah al Aiz 1831254045 and Md Ibnul Hasan Abir 1821604643 from Electrical and Computer Engineering Department of North South University, have worked on the Senior Design Project titled “Smart-phone Control Robotic Arm” under the supervision of Mr Intisar Tahmid Naheen (ITN) fulfillment the requirement for the degree of Bachelors of Science in Engineering and has been accepted as satisfactory.

Supervisor’s Signature

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Mr Intisar Tahmid Naheen (ITN)

Lecturer

Department of Electrical and Computer Engineering

North South University.

Chairman’s Signature

…….

Dr. Rajesh Palit

Professor & Chair

Department of Electrical and Computer Engineering

North South University.

DECLARATION

This is to certify that this Project is our original work. No part of this work has been submitted elsewhere partially or fully for the award of any other degree or diploma. Any material reproduced in this project has been properly acknowledged.

Students' names & Signatures

1. Student Name 1

Sarah Al Aiz

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2. Student Name 2

Md Ibnul Hasan Abir

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ACKNOWLEDGEMENTS

By mercy of the Almighty we have completed our senior design capstone project entitled. ‘Smart-Phone Control Robotic arm’. Foremost, we would like to express our sincere gratitude to our advisor Mr Intisar Tahmid Naheen (ITN) for his continuous support in our capstone project progress throughout the whole 499A, for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped us in all the time of research, writing and completing of this project.

Our sincere thanks also go to North South University, Dhaka, Bangladesh for providing an opportunity in our curriculum which enabled us to have an industrial level experience as part of our academics. Last but not the least, we would like to thank our family as their inspiration and guidance kept us focused and motivated.

ABSTRACT

In the recent years with increasing development of robotic arm and the wireless communications, the demand for a system that could easily connect devices for transfer of data over a long distance - without cables, grew stronger. This project is presenting the development of a smartphone control robot arm. A mobile robot that functional to do pick and place operation and be controlled by using Bluetooth H05 controller. It can move forward, reverse, turn right and left for a specific distance according to the controller specification. The development of this robot is based on Arduino UNO platform that will be interfaced with the smartphone application controller to the robotic arm. Analysis such as speed, distance, load that can be lifted of the robot has been done in order to know its performance. Finally, this prototype of the robot is expected to overcome the problem such as placing or picking object that far away from the user, pick and place hazardous object in the fastest and easiest way. This project will inspire the future generation for using the robotic arm and also informed the advantage of using this robot.