

FINAL YEAR PROJECT REPORT
Intelligent Helping Hand



A PROJECT REPORT

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IN

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STATEMENT OF SUBMISSION

A report submitted to the
Department of Electrical Engineering
In partial fulfillment of the requirements for the Degree of
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Dedication

Every challenging work needs self-effort as well as the guidance of the elders especially those who are very close to our heart. We will like to dedicate our humble effort to our sweet and loving parents. Without their support, guidance, and prayers we would never have accomplished such an enormous task. We would like to dedicate this to all teachers, friends and professionals who provided us continuous support and guidance in order to bring this spectacular helping hand to completion.

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Acknowledgment

We are thankful to ALMIGHTY ALLAH who granted us with the wisdom, the strength, and the courage to complete this project. We would like to thank our project advisor Mr. Haris, who continuously enlightened our minds and lit our paths throughout the course of the project. It was his inspirational instructions and guidance that directed us to right path. We consider ourselves extremely fortunate to have him as our advisor and be able to gain from his banks of knowledge.

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Abstract

With the advent of technology, we are making our lives luxurious. Electricity, computers, robotics etc. are making our tasks far more easier than we could have imagined. In our society, it's a common observation that an ordinary person intends to make his life luxurious by the utilization of additional facilities whereas, somewhere, a physically impaired person has a different perspective, he just wants to make his life ordinary by utilizing advance technology.

Now due to the advancement in the field of Robotics, giving artificial body parts to physically impaired people has become quite helpful. So our project is designed to provide a prosthetic robotic hand to the people who have disability so that they (somehow) would be able to live their life normally. Disabled person can operate the hand and give commands to grab and release the object through voice recognition. It also finds application in industry, such as mimicking the movement of the hand can be performed. At one place human hand with sensors will move and through wireless signal, robotic hand can be moved on the other end. Scientists can use this technology for their research in harmful living things. Hostile environment in factories cannot allow humans to work with, so the mimicking of robotic hand will prove very useful in this field.

Voice recognition module is being trained with user's voice so that it will not accept any other voice. Commands to perform specific actions are stored in the module's database. User may order the module to perform a specific action by simply speaking the command. The voice recognition system serves as the interface between the user and the hand by processing the voice signals into the required mechanical work. The mechanical work comprises of the movement to perform certain tasks like grab, release etc. The movement of the fingers is governed by tactile sensors that sense the requirement of pressure and thus control the rotation of fingers (an assembly of pulleys, nylon fibbers and motors managed by microcontroller).

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Contents

STATEMENT OF SUBMISSION.....	2
Dedication	Error! Bookmark not defined.
Acknowledgments.....	Error! Bookmark not defined.
Abstract.....	Error! Bookmark not defined.
List of Figures.....	Error! Bookmark not defined.
Chapter 1 Introduction.....	9
1.1 Problem Statement	9
1.2 Objectives.....	10
Chapter 2 Theoretical Background and Review of Literature	11
2.1 History of Prosthetics	Error! Bookmark not defined.
2.2 The Designs of Prosthetic Hands.....	Error! Bookmark not defined.
2.3 Interfacing of the hand.....	Error! Bookmark not defined.
Chapter 3 Details of Theoretical Design	Error! Bookmark not defined.
3.1 The Mechanical Design.....	Error! Bookmark not defined.
3.2 Voice Recognition System.....	Error! Bookmark not defined.
3.3 Microprocessor.....	Error! Bookmark not defined.
3.4 PWM.....	Error! Bookmark not defined.
3.5 Servo Motors	Error! Bookmark not defined.
3.6 Sensors.....	Error! Bookmark not defined.
Chapter 4 Practical Implementation.....	Error! Bookmark not defined.
4.1 Making of the Hand.....	Error! Bookmark not defined.
4.2 Interfacing of equipment	Error! Bookmark not defined.
Chapter 5 Testing and Evaluation	Error! Bookmark not defined.
Chapter 6 Results and Error Analysis.....	40
Chapter 7 Component Selection and Bill of Material	41
7.1 Component Order Guide.....	41
7.2 Bill of Material	41
Chapter 8 Difficulties Faced	43
Chapter 9 Manufacturability, Usability and Sustainability	44
Chapter 10 Future Development.....	45

[Type text]

Chapter 11	Societal Issues.....	46
11.1	Ethical.....	46
11.2	Social.....	46
11.3	Economical.....	46
11.4	Health and Safety.....	46
11.5	Environmental Impact.....	46
Chapter 12	Conclusions and Recommendations.....	Error! Bookmark not defined.
References.....		Error! Bookmark not defined.
Appendices.....		Error! Bookmark not defined.
Appendix A.....		Error! Bookmark not defined.
Appendix B.....		Error! Bookmark not defined.
Appendix C.....		Error! Bookmark not defined.
Appendix D.....		Error! Bookmark not defined.

[Type text]

List of figures

Figure number and it's detail

1. Evolution of prosthetics.....	pg# 12
2. Prosthetic leg used for Queen Vishpla, 3500-1800 BC.....	pg#12
3. 15 th century "GOTZ HAND".....	pg#13
4. 19 th century prosthetic hand moulded from plywood.....	pg#14
5. Gripper used in prosthetics.....	pg#15
6. Hook used for holding objects in prosthetics.....	pg#15
7. Different prosthetic hands being used in history.....	pg#16
8. Different types of hooks used in prosthetics.....	pg#17
9. Gripper used in prosthetics.....	pg#18
10. Most advanced "be-bionic" and "I-limb ultra" hand.....	pg#19
11. Shoulder powered prosthetic hook.....	pg#20
12. Interfacing through muscular signals in Myoelectric Hand	pg#22
13. Sensing element used in HAPTIX programme.....	pg#22
14. Phalanxes in fingers.....	pg#23
15. Link transmission used to rotate fingers.....	pg#24
16. Tendon transmission used to rotate fingers.....	pg#25
17. Easy VR shield 2.0.....	pg#26
18. Arduino UNO ATmega328.....	pg#27
19. PWM signals used to control voltage level.....	pg#28
20. Micro servo SG90.....	pg#30
21. Metallic geared servo MG996R.....	pg#31
22. FSR (force sensing resistor).....	pg#32
23. First assembly of prosthetic hand (1).....	pg#34
24. First assembly of prosthetic hand (2).....	pg#34
25. Wrong placement of motors on hand (1).....	pg#37
26. Wrong placement of motors on hand (2).....	pg#37
27. Right placement of motors on hand.....	pg#38
28. Making of support strap.....	pg#38