



DAYANANDA SAGAR UNIVERSITY

KUDLU GATE, BANGALORE – 560068

**Bachelor of Technology
in
COMPUTER SCIENCE AND ENGINEERING**

Major Project Phase-II Report

(DIGITAL DERMATOLOGY USING MACHINE LEARNING)

By

Somesh J- ENG19CS1017

Suhas V Naik- ENG19CS1020

Karna Dasaradha Mallikarjuna Reddy- ENG19CS1004

Yallaling-ENG18CS0325

Sahana.L-ENG19CS1014

Under the supervision of

Dr.Debanjali Bhattacharya

Associate Professor

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SCHOOL OF ENGINEERING
DAYANANDA SAGAR UNIVERSITY
(2021-2022)**



DAYANANDA SAGAR UNIVERSITY

**School of Engineering
Department of Computer Science & Engineering**

Kudlu Gate, Bangalore – 560068
Karnataka, India

CERTIFICATE

This is to certify that the Phase-II project work titled “**DIGITAL DERMATOLOGY USING MACHINE LEARNING**” is carried out by, a **SUHAS V NAIK(ENG19CS1020),SOMESH J(ENG19CS1017)KARNADMREDDY(ENG19CS1004),YALLALING(ENG18CS0325)SAH ANA(ENG19CS1014)** bonafide students of Bachelor of Technology in Computer Science and Engineering at the School of Engineering, Dayananda Sagar University, Bangalore in partial fulfillment for the award of degree in Bachelor of Technology in Computer Science and Engineering, during the year **2021- 2022**.

Dr. Debanjali Bhattacharya	Dr Girisha G S	Dr. A Srinivas
Assistant/Associate/ Professor Dept. of CS&E, School of Engineering Dayananda Sagar University Date:	Chairman CSE School of Engineering Dayananda Sagar University Date:	Dean School of Engineering Dayananda Sagar University Date:

Name of the Examiner

- 1.
- 2.

Signature of Examiner

DECLARATION

We, **SUHAS V NAIK (ENG19CS1020), SOMESH J (ENG19CS1017), KARNA REDDY (ENG19CS1004), YALLALING (ENG18CS0325), SAHANA L (ENG19CS1014)** are students of the eight semester B.Tech in **Computer Science and Engineering**, at School of Engineering, **Dayananda Sagar University**, hereby declare that the phase-II project titled **“DIGITAL DERMATOLOGY USING MACHINE LEARNING”** has been carried out by us and submitted in partial fulfillment for the award of degree in **Bachelor of Technology in Computer Science and Engineering** during the academic year **2021-2022**.

Student

Signature

Name1: SOMESH J

USN : ENG19CS1017

Name2: SUHAS V NAIK

USN : ENG19CS1020

Name3: KARNA D M

REDDY

USN : ENG19CS1004

Name4: YALLALING

USN : ENG18CS0325

Name5: SAHANA L

USN : ENG19CS1014

Place : Bangalore

Date :

ACKNOWLEDGEMENT

It is a great pleasure for us to acknowledge the assistance and support of many individuals who have been responsible for the successful completion of this project work.

First, we take this opportunity to express our sincere gratitude to School of Engineering & Technology, Dayananda Sagar University for providing us with a great opportunity to pursue our Bachelor's degree in this institution.

We would like to thank **Dr. A Srinivas. Dean, School of Engineering & Technology, Dayananda Sagar University** for his constant encouragement and expert advice. It is a matter of immense pleasure to express our sincere thanks to **Dr. Girisha G S, Department Chairman, Computer Science, and Engineering, Dayananda Sagar University**, for providing the right academic guidance that made our task possible.

We would like to thank our guide **Dr. Debanjali Bhattacharya , Associate Professor, Dept. of Computer Science and Engineering, Dayananda Sagar University**, for sparing his/her valuable time to extend help in every step of our project work, which paved the way for smooth progress and the fruitful culmination of the project.

We would like to thank our Project Coordinator Dr. Meenakshi Malhotra and all the staff members of Computer Science and Engineering for their support.

We are also grateful to our family and friends who provided us with every requirement throughout the course. We would like to thank one and all who directly or indirectly helped us in the Project work

SOMESH J (ENG19CS1017)

SUHAS V NAIK (ENG19CS1020)

KARNA D M REDDY (ENG19CS1004)

YALLALING (ENG18CS0325)

SAHANA L (ENG19CS1014)

TABLE OF CONTENTS

Page

CHAPTER 1 INTRODUCTION	2
1.1. IDENTIFYING THE DISEASE	2
1.2. HISTORY OF THE DISEASE.....	2
1.3. SCOPE.....	3
CHAPTER 2 PROBLEM DEFINITION.....	4
CHAPTER 3 LITERATURE SURVEY	5
CHAPTER 4 PROJECT DESCRIPTION	7
4.1. PROPOSED DESIGN	7
CHAPTER 5 REQUIREMENTS.....	9
5.1. FUNCTIONAL REQUIREMENTS... ..	9
5.2.NON FUNCTIONAL REQUIREMENTS.....	9
5.3.SOFTWARE REQUIREMENTS	10
5.4.HARDWARE REQUIREMENTS.....	10
CHAPTER 6 METHODOLOGY	11
CHAPTER 7 EXPERIMENTATION	19
CHAPTER 8 TESTING AND RESULTS	20
CHAPTER 9 CONCLUSION AND FUTURE WORK.....	24
REFERENCES	25

LIST OF FIGURES

Fig. No.	Description of the figure	Page No.
4.1	Flow Chart	7
4.2	Data Flow Diagram	8
6.1	Software Development life cycle	11
6.2	Steps of Methodology	12
6.3	Convolution layer	15
6.4	Convolution layer	16
6.5	Confusion matrix and formulae	18
7	Pie Chart	19
8.1	Login Page	21
8.2	Home Page	21
8.3	Results	22
8.4	Accuracy plot graph	22
8.5	Loss plot graph	23
8.6	Visualization Graph	23

LIST OF TABLES

Table No.	Description of the Table	Page No.
8	Testing and Results	20

ABSTRACT

Dermatological disorders are one of the most widespread diseases in the world. Despite being common its diagnosis is extremely difficult because of its complexities of skin tone, colour, presence of hair. Human skin is considered the most uncertain and troublesome terrains due to the existence of hair, its deviations in tone and other mitigating factors. The skin disease diagnosis includes a series of pathological laboratory tests for the identification of the correct disease. We will get the data from the online source and will test our classification model on our prepared image dataset and also measure the performance on our dataset. To evaluate the performance of our created classification and make it comparable to current approaches, we use accuracy to measure the effectiveness of classifiers. In this prediction model we intend to create a web application using flask and programming language is machine learning with python ,and we implement it using jupyter notebook and we install anaconda software which provides an environment. The downloaded datasets ,in our project we have 4 classes of skin diseases, once we give a data of skin disease to the model it will process and do the prediction with certain accuracy and give the label of that particular disease.
