# MEDISENSE: AI-ENHANCED HEALTH DIAGNOSTICS AND NATURAL REMEDIES



#### A DESIGN PROJECT REPORT

submitted by

**MAYURI DEVI S (811722104088)** 

MONIKA M (811722104092)

**MUBINA BEGUM M (811722104094)** 

in partial fulfilment for the award of the degree

of

## **BACHELOR OF ENGINEERING**

in

## COMPUTER SCIENCE AND ENGINEERING

### K RAMAKRISHNAN COLLEGE OF TECHNOLOGY

(An Autonomous Institution, affiliated to Anna University Chennai, Approved by AICTE, New Delhi)

Samayapuram – 621 112

# K RAMAKRISHNAN COLLEGE OF TECHNOLOGY



(AUTONOMOUS)

#### SAMAYAPURAM – 621 112

#### **BONAFIDE CERTIFICATE**

Certified that this project report titled "MEDISENSE: AI-ENHANCED HEALTH DIAGNOSTICS AND NATURAL REMEDIES" is bonafide work of MAYURI DEVI S (811721104088), MONIKA M (811721104092), MUBINA BEGUM M (81172110494) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

**SIGNATURE SIGNATURE** Dr.A Delphin Carolina Rani M.E.,Ph.D., Dr.C.Shyamala, M.E., Ph.D HEAD OF THE DEPARTMENT **SUPERVISOR** Associate Professor **PROFESSOR** Department of CSE Department of CSE K Ramakrishnan College of Technology K Ramakrishnan College of Technology (Autonomous) (Autonomous) Samayapuram – 621 112 Samayapuram – 621 112

Submitted for the viva-voice examination held on .....

INTERNAL EXAMINER

EXTERNAL EXAMINER

**DECLARATION** 

We jointly declare that the project report on "OCULAR HANDLED VIRTUAL

MOUSE USING HAAR CASCADE ALGORITHM" is the result of original work

done by us and best of our knowledge, similar work has not been submitted to

"ANNA UNIVERSITY CHENNAI" for the requirement of Degree of Bachelor Of

Engineering. This project report is submitted on the partial fulfilment of the

requirement of the awardof Degree of Bachelor Of Engineering.

Signature
MAYURI DEVI S
 MONIKA M
MOT WILL IN
MUBINA BEGUM M

Place: Samayapuram

Date:

#### **ACKNOWLEDGEMENT**

It is with great pride that we express our gratitude and indebtness to our institution "K RAMAKRISHNAN COLLEGE OF TECHNOLOGY", for providing us with the opportunity to do this project.

We are glad to credit honorable chairman **Dr. K RAMAKRISHNAN**, **B.E.**, for having provided for the facilities during the course of our study in college.

We would like to express our sincere thanks to our beloved Executive Director **Dr. S KUPPUSAMY**, **MBA**, **Ph.D.**, for forwarding our project and offering adequate duration to complete it.

We would like to thank **Dr. N VASUDEVAN**, **M.Tech.**, **Ph.D.**, Principal, who gave opportunity to frame the project with full satisfaction.

We whole heartily thank **Dr. A DELPHIN CAROLINA RANI, M.E., Ph.D.,** Head of the Department, **COMPUTER SCIENCE AND ENGINEERING** for providing her support to pursue this project.

We express our deep and sincere gratitude and thanks to our project guide

**Dr.C.SHYAMALA, M.E., Ph.D** Department of **COMPUTER SCIENCE AND ENGINEERING,** for his incalculable suggestions, creativity, assistance and patience which motivated us to carry our this project.

We render our sincere thanks to Course Coordinator and other staff members for providing valuable information during the course. We wish to express our special thanks to the officials and Lab Technicians of our departments who rendered their help during the period of the work progress.

#### **ABSTRACT**

MediSense: AI-Enhanced Health Diagnostics and Natural Remedies is an innovative project aimed at simplifying medical report analysis and providing personalized health advice in Tamil, English, or Hindi. This system uses advanced AI techniques, including convolutional neural networks and image processing algorithms, to analyze photocopies of medical reports, such as blood tests. MediSense offers diagnostic feedback and suggests natural remedies tailored to the identified health conditions. For example, if a blood test shows high blood sugar levels, the system recommends lifestyle changes such as reducing sugar intake and increasing physical activity. By delivering insights in the user's chosen language, MediSense ensures the information is accessible and actionable, promoting better health management and informed decision-making. This project bridges modern AI technology with traditional health practices to enhance overall well-being

## **TABLE OF CONTENTS**

CHAPTER	TITLE	PAGE NO
	ABSTRACT	v
	LIST OF FIGURES	ix
	LIST OF ABBREVIATIONS	X
1	INTRODUCTION	1
	1.1 Background	1
	1.2 Overview	2
	1.3 Problem Statement	3
	1.4 Objective	3
	1.5 Implication	3
2	LITERATURE SURVEY	4
3	SYSTEM ANALYSIS	5
	3.1 Existing System	5
	3.2 Proposed System	6
	3.3 Block Diagram for Proposed System	6
	3.4 Flowchart	7
	3.5 Process Cycle	8
	3.6 Activity Diagram	9

# 4 MODULES

	4.1 Module Descriptiom	10
	4.1.1. User Management Module	10
	4.1.2. Medical Report Processing Module	11
	4.1.3. AI-Powered Analysis Module	11
	4.1.4. Diagnostic and Recommendation Module	11
	4.1.5. Multilingual Support Module	11
	4.1.6. Database and Security Module	12
	4.1.7. Deployment and Maintenance Module	12
5	SYSTEM SPECIFICATION	
	5.1 Software Requirements	13
	5.1.1 Python 3.9	13
	5.1.2 TensorFlow 2.8	14
	5.1.3 OpenCV 4.5	14
	5.1.4 NLTK 3.7	14
	5.1.5 Flask 2.0	14
	5.1.6 HTML,CSS&JS	14
	5.2 Hardware Requirements	13
	5.2.1 Processor: Intel Core i5 or AMD equivalent	
	5.2.2 RAM: 8 GB	
	5.2.3 Storage: 256 GB	
	5.2.4 Operating System: Windows 10 or Ubuntu 20.04	

6	METHODOLOGY	15
	6.1 Image Processing and Feature Extraction	15
	6.1.1 Image Preprocessing	15
	6.1.2 Feature Extraction using OpenCV	15
	6.1.3 Image Enhancement Techniques	15
	6.2 AI-Powered Analysis	16
	6.2.1 Convolutional Neural Network (CNN) Implementation	16
	6.2.2 Training and Testing of CNN Model	16
	6.2.3 Integration with Medical Knowledge Database	16
	6.3 Natural Language Processing (NLP)	17
	6.3.1 Text Preprocessing	17
	6.3.2 Sentiment Analysis and Entity Recognition	17
	6.3.3 Generation of Diagnostic Reports	17
	6.4 Multilingual Support	18
	6.5 System Integration and Testing	18
7	CONCLUSION AND FUTURE ENHANCEMENT	19
	7.1 Conclusion	19
	7.2 Future Enhancement	20
	APPENDIX-1	21
	APPENDIX-2	26
	REFERENCES	31

# LIST OF FIGURES

FIGURE NO	FIGURE NAME	PAGE NO
1.1	Flow of MediSense	1
3.1	Block Diagram	6
3.2	Flowchart for Image Processing and Analysis	7
3.5	Process Cycle for AI-Powered Diagnosis	8
3.5	Action Sequence of Medisense	9
4.1	ContolFlow of MediSense	10
4.2	Usecase of MediSense	12

#### LIST OF ABBREVIATIONS

#### ABBREVIATION FULL FORM

AI Artificial Intelligence

CNN Convolutional Neural Network

GUI Graphical User Interface

CV Computer Vision

IoT Internet of Things

ML Machine Learning

NLP Natural Language Processing

OCR Optical Character Recognition

RGBD Red Green Blue Depth

UI User Interfacce

IDE Integrated Development Environment

E-R Entity-Relationship

UX User Experience

API Application Programming Interface

DB Database