

# **AUTOMATED SICKLE CELL ANAEMIA DETECTOR**

Submitted in partial fulfillment of the requirements  
of the degree of

**B. E. Computer Engineering**

By

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## **CERTIFICATE**

This is to certify that the project entitled “**Automated Sickle Cell Anaemia Detector**” is a bonafide work of **Gemmy George (112044)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of B.E. in Computer Engineering.

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## **Project Report Approval for B.E.**

This project report entitled **Automated Sickle Cell Anaemia Detector** by **Gemmy George (112044)** is approved for the degree of ***B.E. in Computer Engineering.***

Examiners

1.-----

2.-----

Date:

Place:

# Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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## Abstract

‘Sickle Cell Anaemia’ is a widely prevalent inherited blood disorder wherein the red blood cells present in the blood-vessels assume a ‘sickle shaped’ or ‘crescentic’ form. This affects the oxygen carrying capacity of the blood, resulting in anaemia and various other life-threatening complications. There’s no standard cure for the disease but early detection can prevent fatal complications that may arise in later stages. Our project, therefore, involves developing software termed – **Automated Sickle Cell Anaemia Detector** (A.S.C.A.D). It is based on image processing as it takes as input microscopic image of the blood smear and detects the presence of abnormally shaped red blood cells and thereby diagnoses sickle cell anaemia in patients. By cutting down the time exhausted in manual laboratorial blood examinations and accidental human errors, we attempt to expedite the process of differential diagnosis.

# Contents

Chapter	Contents	Page No.
1	INTRODUCTION	1
	1.1 Description	1
	1.2 Problem Formulation	2
	1.3 Motivation	2
	1.4 Proposed Solution	3
	1.5 Scope of the project	4
2	REVIEW OF LITERATURE	5
3	SYSTEM ANALYSIS	7
	3.1 Functional Requirements	7
	3.2 Non Functional Requirements	7
	3.3 System Requirements	9
	3.4 Use-Case Diagrams and description	10
4	ANALYSIS MODELING	12
	4.1 Activity Diagram	12
	4.2 Functional Modeling	13
	4.3 TimeLine Chart	14
5	DESIGN	16
	5.1 Architectural Design	16
	5.2 User Interface Design	18
6	IMPLEMENTATION	19
	6.1 Algorithm	19
	6.2 Working of the project	20
7	Testing	27
	7.1 Test cases	27
	7.2 Type of Testing used	28
8	RESULTS AND DISCUSSIONS	31
9	CONCLUSIONS & FUTURE SCOPE	34
-	Literature Cited	-
-	Acknowledgements	-

## **List of Figures**

<b>Fig. No.</b>	<b>Figure Caption</b>	<b>Page No.</b>
1.4.1	Proposed solution block diagram	3
3.4.1.1	Use case diagram	10
4.1.1	Activity diagram	12
4.2.1	Data flow diagram (level 0)	13
4.2.2	Data flow diagram (level 1)	13
4.3.1	Timeline chart	14
4.3.2	Gantt chart	14
5.1	Architectural design	16
5.2.1	User interface	18
6.2.1	GUI layout	20
7.2.1	Testing : Blank patient name	28
7.2.2	Testing : Blank patient age	28
7.2.3	Testing : Invalid patient age	29
7.2.4	Testing : Blank doctor name	29
7.2.5	Testing : Blank image path	30
7.2.6	Testing : Trying to enter an invalid image path	30
8.1	Result of histogram stretching	31
8.2	Resulting image after imfill operator	31
8.3	Result of filtering the image	32
8.4	Result of erosion and clearing the border objects	32

## **List of Tables**

<b>Table No.</b>	<b>Table Caption</b>	<b>Page No.</b>
3.4.2.1	Use case description	10
7.1.1	Test case table	27
8.1	Result analysis	33