

# **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 **Linus Castelino (112011)** 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 **Linus Castelino (112011)** 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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Date:

## 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.

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