# VISVESVARAYA TECHNOLOGICAL UNIVERSITY
### "Jnana Sangama", Belagavi-560014, Karnataka

## "Detection of Early Stage in Anemia"

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE*

## BACHELOR OF ENGINEERING
### IN
## INFORMATION SCIENCE & ENGINEERING

**Submitted By**

| | |
|---|---|
| DEEPA R ARADHYAMATA | [1SV20IS003] |
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Under the guidance of

**Prof. Venugopal D** B.E., M. Tech.,

**Assistant Professor, Dept. of ISE.**

**SHRIDEVI**
EDUCATION

**Department of Computer Science and Engineering**

**SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY**
**(Affiliated To Visvesvaraya Technological University)**
**Sira Road, Tumakuru – 572106, Karnataka.**
**2023-2024**

## DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

## <u>CERTIFICATE</u>

This is to certify that, Project work Phase II entitled "DETECTION OF EARLY STAGE IN ANEMIA" has been Successfully carried out by DEEPA R ARADHYAMATA [1SV20IS003], NITHIN D G [1SV20IS009], REKHA [1SV20IS010], REVATHI P O [1SV20IS011] in partial fulfillment for the award of **Bachelor of Engineering in Information Science & Engineering** of the **Visvesvaraya Technological University, Belagavi** during the academic year **2023-24**. It is certified that all the corrections/suggestions indicated for internal assessments have been incorporated in the report. The Project report has been approved as it certifies the academic requirements in respect of Project work Phase II prescribed for the Bachelor of Engineering Degree.

<u>Signature of Guide</u>

**Prof. Venugopal D** B.E., M. Tech.,
Asst.  Prof., Dept. of ISE

<u>Signature of HOD</u>

**Dr. Rekha H** Ph.D., MISTE
Prof. & HOD, Dept. of ISE

<u>Signature of Principal</u>

**Dr.Narendra Viswanath** M.E., Ph.D., MIE, MISTE, MIWS., FIV.,
Principal, SIET, Tumakuru

**External Viva**

**Name of the Examiners**

**Signature with date**

1 ..Dr...Shakunthala B. S
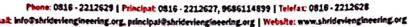
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ESTD. 2002

## DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

# DECLARATION

We, DEEPA R ARADHYAMATA [1SV20IS003], NITHIN D G [1SV20IS009], REKHA [1SV20IS010], REVATHI P O [1SV20IS011] student of VIII semester **B.E** in Information Science &Engineering, at Shridevi Institute of Engineering & Technology, Tumakuru, here by declarethat,the Project work Phase II entitled "DETECTION OF EARLY STAGE IN ANEMIA" embodies the report of our Project work carried out underthe guidance of **Prof. Venugopal D, Assistant Professor, Department of ISE, SIET, Tumakuru** as partial fulfillment of requirements for the award of degree in **Bachelor of Engineering in Information Science & Engineering of Visvesvaraya Technological University, Belagavi**, during the academic year **2023-24**. The Project has been approved as it satisfies the academic requirements in respect to the Project work Phase II.

Student Name & Signature

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|---|---|---|
| **Deepa R Aradhyamata** | [1SV20CS003] | ................. |
| **Nithin D** | [1SV20CS009] | ................. |
| **Rekha** | [1SV20CS010] | ................. |
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**PLACE: TUMAKURU**
**DATE :**

# ACKNOWLEDGEMENT

This Project will be incomplete without thanking the personalities responsible for this venture, which otherwise would not have become a reality.

We express our profound gratitude to **Dr. Narendra Viswanath**, Principal, S.I.E.T, for his moral support towards completing our Project work.

We would like to thank Head of Department **Dr. Rekha H** Head, Department of ISE, SIET for providing all the support and facility.

We would like to thank my guide **Prof. Venugopal D** Assistant Professor, Department of Information Science and Engineering, SIET for her help, sharing him technical expertise and timely advice.

We would like to my Project Coordinator, **Prof. Venugopal D** Assistant Professor, Department of Information Science and Engineering, SIET for providing all the support and faculty.

We would like to express our sincere gratitude to all teaching and non-teaching faculty of the department of ISE for guiding us of this project by giving valuable suggestion and encouragement.

By,
Deppa R Aradhyamata    [1SV20IS003]
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# ABSTRACT

Detecting early stages of anemia is crucial for timely intervention and prevention of complications. This study proposes a novel approach leveraging machine learning algorithms to analyze comprehensive blood profiles and identify subtle changes indicative of early anemia onset. By integrating various hematological parameters such as hemoglobin levels, mean corpuscular volume, and red blood cell distribution width, our model demonstrates high accuracy in distinguishing pre-anemic individuals from healthy controls. Early detection enables targeted interventions, potentially improving patient outcomes and reducing healthcare burden associated with advanced anemia by using diffent types of machine learning algorithms like neural network, dectsion tree, confusion matrix and logistic regression.