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

A PROJECT REPORT ON

"Analysis and Classification of Heart Disease Using Machine Learning Algorithms"

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

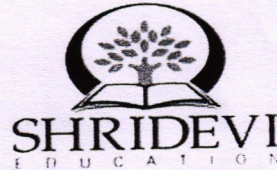## BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE & ENGINEERING

Submitted By

Hemanth K R	**[1SV19CS035]**
Madhava Reddy M	**[1SV19CS041]**
Rahul S	**[1SV19CS054]**

Under the guidance of

Mr. Kiran G M B.E., M.Tech.

Assisstant Professor, Dept. of CSE.

PRINCIPAL
SIET. TUMKUR.

SHRIDEVI
E D U C A T I O N

Department of Computer Science and Engineering

SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Affiliated To Visvesvaraya Technological University)
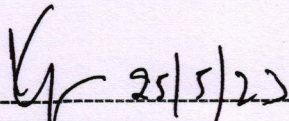### Sira Road, Tumakuru – 572106, Karnataka.
2022-2023

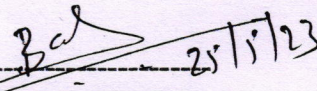## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that, project report of entitled "Analysis and Classification of Heart Disease Using Machine Learning Algorithm" has been successfully carried out by Hemanth K R [1SV19CS035], Madhava Reddy M [1SV19CS041], Rahul S [1SV19CS054], in partial fulfillment for the award of **Bachelor of Engineering** in **Computer Science & Engineering** of the **Visvesvaraya Technological University, Belagavi** during the academic year **2022-23.** 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 prescribed for the Bachelor of Engineering Degree.
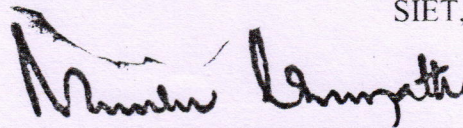
25/5/23

Signature of Guide

Mr. Kiran G M B.E., M.Tech.

Assistant Professor,

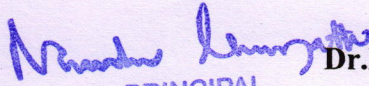Dept. of CSE,

SIET, Tumakuru.

25/5/23

Signature of H.O.D

Dr. Basavesh D B.E., M.Tech., Phd,

Associate Professor & HOD

Dept. of CSE,

SIET, Tumakuru.

Signature of Principal
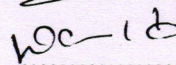
PRINCIPAL
SIET. TUMKUR.

Dr.Narendra Viswanath M.E., Ph.D., MIE, MISTE, MIWS., FIV.,

Principal,

SIET, Tumakuru

External Viva

Name of the Examiners

1 Dr. Basavesha D

2. Wasim Uddin

Signature with date

25/5/23

25/5/23

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We, **Hemanth K R [1SV19CS035], Madhava Reddy M [1SV19CS041], Rahul S [1SV19CS054],** students of VIII semester **B.E** in Computer Science & Engineering, at Shridevi Institute of Engineering & Technology, Tumakuru, hereby declare that, the Project work-II entitled **"Analysis and Classification of Heart Disease Using Machine Learning Alogrithms"**, embodies the report of our Project work carried out under the guidance of **Mr. Kiran G M, Assistant Professor, Department of CSE, SIET, Tumakuru** as partial fulfillment of requirements for the award of the degree in **Bachelor of Engineering in Computer Science & Engineering of Visvesvaraya Technological University, Belagavi**, during the academic year **2022-23**. The Project has been approved as it satisfies the academic requirements in respect to the Project work.
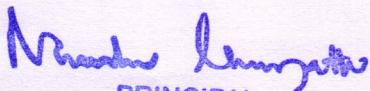
Place: Tumakuru

Date: 25/05/23

Student Name & Signature

Hemanth K R   [1SV19CS035] ....

Madhava Reddy M [1SV19CS041] ....

Rahul S   [1SV19CS054] ....

PRINCIPAL
SIET. TUMKUR.

Date: 24/05/2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. HEMANTH K R** bearing USN 1SV19CS035 Student of **Shridevi Institute of Engineering and Technology** has successfully completed his Project Work titled "Analysis and Classification of Heart Disease Using Machine Learning Algorithms".

We wish every success in his career.

For ShriTEK Innovations

PRINCIPAL
SIET. TUMKUR.

Authorized Signature

Date: 24/05/2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. MADHAVA REDDY M** bearing USN 1SV19CS041 Student of **Shridevi Institute of Engineering and Technology** has successfully completed his Project Work titled "Analysis and Classification of Heart Disease Using Machine Learning Algorithms".

We wish every success in his career.

For ShriTEK Innovations

Authorized Signature

PRINCIPAL
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ShriTEK Innovations

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✉ : shritekinnovations@gmail.com

Date: 24/05/2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. RAHUL S** bearing USN 1SV19CS054 Student of **Shridevi Institute of Engineering and Technology** has successfully completed his Project Work titled "Analysis and Classification of Heart Disease Using Machine Learning Algorithms".

We wish every success in his career.

For ShriTEK Innovations

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Authorized Signature

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. Basavesha D,** Head, Department of CSE, SIET for providing all the support and facility.

We would like to thank my guide **Mr. Kiran G M, Assistant Professor,** Department of computer Science and Engineering, SIET for his help, sharing his technical expertise and timely advice.

We whole heartedly thank, **Mr. Suthan R,** Assistant Professor, Project coordinator, Department of Computer Science and Engineering, for the support.
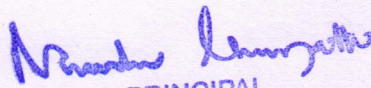
We would like to express our sincere gratitude to all teaching and non-teaching faculty of the department of CSE for guiding us of this project by giving valuable suggestion and encouragement.

By,

Hemanth K R   **[1SV19CS035]**
Madhava Reddy M **[1SV19CS041]**
Rahul S   **[1SV19CS054]**

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Abstract

Health care field has a vast amount of data, for processing those data certain techniques are used. Machine learning is one of the techniques often used. Heart disease is the Leading cause of death worldwide. This System predicts the arising possibilities of Heart Disease. The outcomes of this system provide the chances of occurring heart disease in terms of accuracy. The datasets used are classified in terms of medical parameters. This system evaluates those parameters using Machine learning classification technique. The datasets are processed in python programming using two main Machine Learning Algorithm namely, Super vector machine Algorithm, K-nearest neighbor Algorithm, Decision Tree Algorithm, Random forest Algorithm and Gradient boosting tree Algorithm, which shows the best algorithm among these five in terms of accuracy level of heart

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