J S S Mahavidyapeetha

Sri Jayachamarajendra College of Engineering (SJCE) Mysore- 570006

An Autonomous Institute Affiliated to

Visvesvaraya Technological University, Belgaum

"Bio-Medical Application on Predicting Blood Donors Using Machine Learning Techniques"

Thesis submitted in partial fulfillment of curriculum prescribed for the award of the degree of

BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE AND ENGINEERING

by

Abhishek Sajjan (4JC14CS001)

Sai Keshav S (4JC14CS085)

Sanganna Hallad (4JC15CS416)

Under the Guidance of

Dr. M. P. Pushpalatha
Professor,
Department of Computer Science & Engineering,
SJCE, Mysore

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
April 2018

J S S Mahavidyapeetha

Sri Jayachamarajendra College of Engineering (SJCE), Mysore-570006

An Autonomous Institute Affiliated to

Visvesvaraya Technological University, Belgaum

CERTIFICATE

This is to certify that the work entitled **"Bio-Medical Application on Predicting Blood Donors Using Machine Learning Techniques"** is a bonafied work carried out by **Abhishek Sajjan, Sai Keshav S, and Sanganna Hallad** in partial fulfillment of the award of the degree of **Bachelor of Engineering in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the year 2017-18**. It is certified that all corrections / suggestions indicated during CIE have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering degree.

Guide
Dr. M. P. Pushpalatha
Professor,
Dept. of CS & E,
S.J.C.E, Mysore

Head of the Department
Dr. H.C.Vijayalakshmi
Head, Dept. of CS & E,
S.J.C.E, Mysore

PANEL MEMBERS

1.……

Place : Mysore

2.……

Date :

3.……

DECLARATION

We, hereby declare that the project work entitled “Bio Medical Application for predicting blood donors using Machine Learning techniques” has been independently carried out by us under the guidance of Dr. M. P. Pushpalatha, Professor, Department of Computer Science and Engineering, Sri Jayachamarajendra College Of Engineering, Mysuru is a record of an original work done by us and this project work is submitted in the partial fulfillment of the award of the degree of Bachelor of Engineering in Computer Science and Engineering of Vishvesvaraya Technological University, Belgaum during year 2017-18. The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

Abhishek Sajjan

Sai Keshav S

Sanganna Hallad

ABSTRACT

Blood donation is an essential activity to acquire blood as a raw material into the blood supply chain. It must be managed effectively together with other processes in blood management. The increasing demand for sophisticated, intelligent systems in the field of healthcare leads to a need for introduction of automation of processes.

The area of transfusion medicine, specifically blood donation services require this implementation at the earliest. The present situation is one where most processes in blood donation services are manual and the demand for blood is constantly on the rise, augmented by declining donation rates.

Hence, an intelligent system that can integrate major operations involved, make efficient decisions and improve communication is highly crucial.

A system of this sort would involve machine learning algorithms for efficient donor selection and a notification system. The motivation for this research is that blood demand is gradually increasing by the day due to needed transfusions due to accidents, surgeries, diseases etc.

Accurate prediction of the number of blood donors can help medical professionals know the future supply of blood and plan accordingly to entice voluntary blood donors to meet demand. It must be managed effectively together with other processes in blood management. In this research, the pattern of blood donors' behaviours based on factors influencing blood donation decision is conducted using online questionnaire.

These factors, i.e., altruistic values, knowledge in blood donation, perceived risks, attitudes towards blood donation, and intention to donate blood, are analysed to find out the possibilities for individuals to become blood donors.

ACKNOWLEDGEMENT

The project work has been a wonderful and zealous task. During the entire process we were empowered with better knowledge and the entire experience has been enlightening. As it is impossible for an ivy creeper plant to prop up without any support it was impossible for us to have achieved so much and realize all possibilities without the constant and unhindered support, encouragement, guidance of many whom we would like to sincerely thank herein and acknowledge their assistance in the completion of this project work.

We express our genuine appreciation towards***, Dr. T N Nagabhushan,*** *Prinpal, SJCE Mysore.* We express our most heartfelt gratitude to the HOD, ***Dr. H.C.Vijayalakshmi****, Head of the Department, Department of Computer Science and Engineering SJCE, Mysore.*

We heartily thank our project guide, ***Dr. M. P. Pushpalatha****, Professor, Department of Computer Science and Engineering, SJCE Mysore*. Without her guidance this project work would have been far from reality. She has guided us in each and every step, beginning from the paper selection of topic to the end, with her vast amount of unparallel knowledge. Her patience, participation and presence of mind paved our way out of any difficulties that we had.

We as well as thank all the teaching and non-teaching members department who have made it possible for us to reach up to the point where we stand today and all the other diligent members of the college.

Abhishek Sajjan

Sai Keshav S

Sanganna Hallad

TABLE OF CONTENTS

LIST OF FIGURES