11 October 2017

The HOD
Computer Engg Dept
VESIT
Mumbai

Dear Professor:

This is to state that 4 of your students, 1. Mihir Wagle, 2.Neeraj Jethnani 3. Aishwarya Chandak 4. Juhl Bhagtani, will be working on an academic research project in the healthcare domain, using the database of patients undergoing dialysis at Apex Kidney Foundation.

We are happy to have them conduct this research and will provide the necessary guidance and support.

Dr.Viswanath Billa MD, DM
Nephrologist and Transplant Physician

VIVEKANAND EDUCATION SOCIETY'S INSTITUTE OF TECHNOLOGY
Department of Computer Engineering
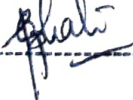

Certificate

This is to certify that **Mihir Wagle, Neeraj Jethnani, Juhi Bhagtani, Aishwarya Chandak** of Fourth Year Computer Engineering studying under the University of Mumbai have satisfactorily completed the project on "**Application of Machine Learning techniques for the analysis and prediction of hypertension and vein function in hemodialysis**" as a part of their coursework of PROJECT-II for Semester-VIII under the guidance of their mentor **Dr. Gresha Bhatia** in the year 2017-2018 .

This thesis/dissertation/project report entitled **Application of Machine Learning techniques for the analysis and prediction of hypertension and vein function in hemodialysis** by **Mihir Wagle, Neeraj Jethnani, Juhi Bhagtani, Aishwarya Chandak** is approved for the degree of Bachelor of Engineering.

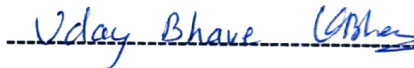| Programme Outcomes	Grade
PO1,PO2,PO3,PO4,PO5,PO6,PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	O

Date: 04/4/18

Project Guide:

Project Report Approval
For
B. E (Computer Engineering)

This thesis/dissertation/project report entitled **Application of Machine Learning techniques for the analysis and prediction of hypertension and vein function in hemodialysis** by *Mihir Wagle, Neeraj Jethnani, Juhi Bhagtani, Aishwarya Chandak* is approved for the degree of Bachelor of Engineering.
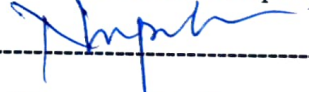
Internal Examiner

External Examiner

Uday Bhave

Head of the Department

Principal

PRINCIPAL,
VIVEKANAND EDUCATION SOCIETY'S
INSTITUTE OF TECHNOLOGY
HASHU ADVANI MEMORIAL COMPLEX,
COLLECTOR'S COLONY, CHEMBUR,
MUMBAI-400 074, INDIA.

Date: 24/4/18
Place: VESIT, Chembur

Abstract

Millions of patients worldwide suffer from Kidney failure and require dialysis. In most cases, dialysis is started after the kidney function of the patient falls below a threshold. In this scenario the patient's kidney is essentially non functional. In order to conduct dialysis, native arteriovenous fistulas are constructed to increase blood flow in the superficial vein. Over time, as dialysis continues, the patient may suffer from hypertension and reduced vein function leading to the collapse of the fistula. The ultrasound doppler test for checking the state of the fistula are expensive and doing it again and again is not feasible. This report proposes a system which takes as input all the factors provided in real time by the dialysis machine and then uses the same to make a prediction on the state of a fistula, saving both time and money of the patient.