FINAL YEAR PROJECT - ZEROTH REVIEW

28-01-2022

DESIGN AND DEVELOPMENT OF IOT BASED HEALTH CARE MONITORING DEVICE FOR EARLY DIAGNOSIS USING AI

PROJECT GUIDE : DR.GEETHA C

TEAM MEMBERS

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27-01-2022
Signature of Project Guide

AIM:

To design a Wearable IOT healthcare monitoring and Heart Disease Prediction device using AI.

OBJECTIVES:

This project aims at designing and developing an IOT based healthcare monitoring and Heart Disease Prediction device using AI and the sub objectives are:

- To design and develop a wearable IOT healthcare monitoring system.
- Successful Data acquisition and transfer from the sensors.
- To process the data acquired and develop a machine learning model for diagnosing of Heart Disease and other ailments using AI.
- To integrate the hardware with software and analyze and validate the system.

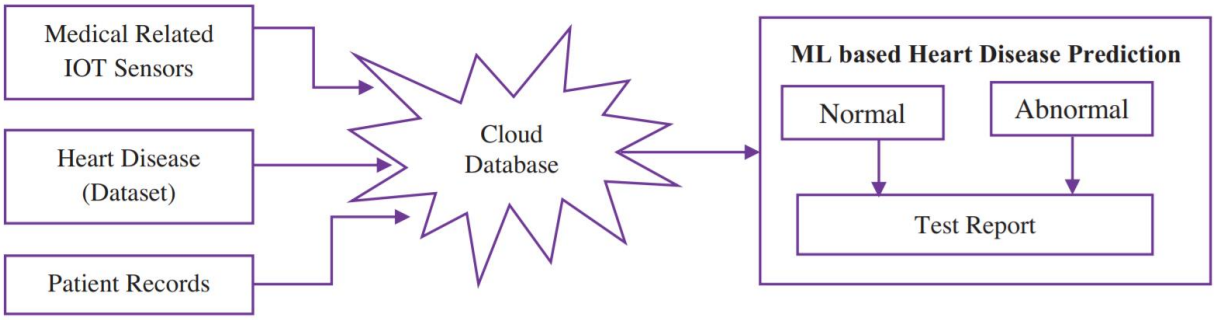
The further improvements in the project include making Web/app user interface design and implementation for better understanding and visualization purposes.

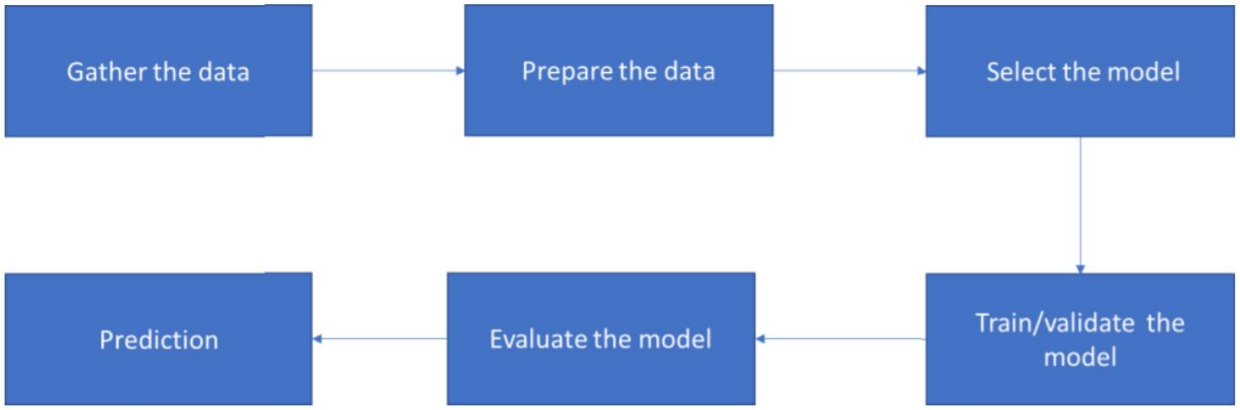
METHODOLOGY:

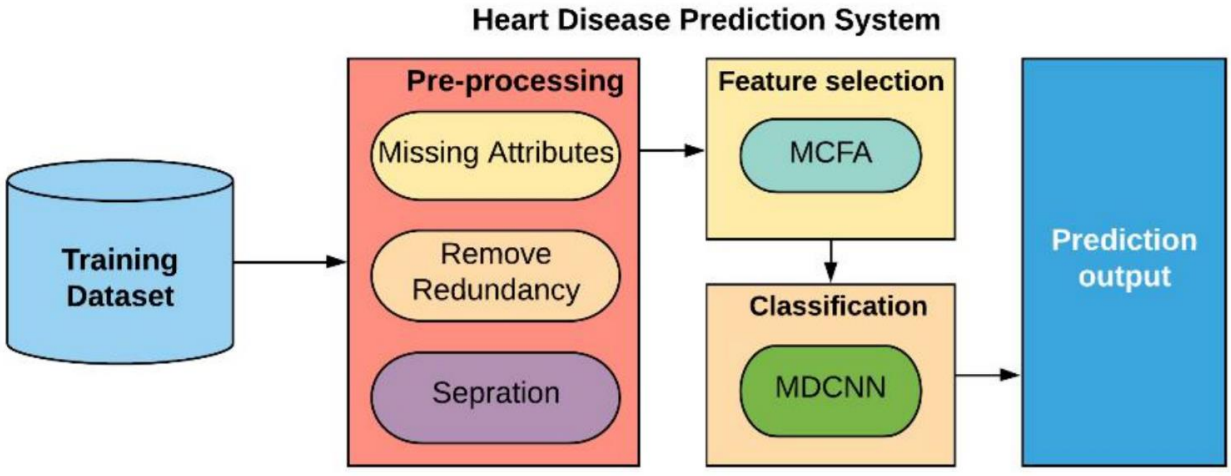
The approach for the proposed project is as follows:

- **Literature survey** :
    - To learn and understand the previous work done in the related area and the feasibility of our idea and implementation.
    - To understand the concept of heart diseases and the vital signs that affect, for better selection of features for the AI model.
- **Building the wearable sensors** :
    - Sensors to be used - body movement sensor (mems ADXL), pressure sensor (MPX10DP), temperature (LM35), heartbeat (SPO2), GPS (VK-16E), GSM/GPRS, humidity sensor, wi-fi (esp8266).
    - Selection of components and design specifications.
    - Calibration and testing of individual sensors.
- **Collect Data :**
    - Data acquisition from sensors.
    - Collection of datasets from online sources (UCI machine learning repository, Hungarian heart disease dataset, Framingham, and Public Health).
- **Build a AI model :**
    - Preprocessing of the data (data cleaning, feature selection and extraction).
    - Design of suitable neural network architecture.
    - Proper parameters selection and optimization employed.
    - Training, testing and debugging of the model.

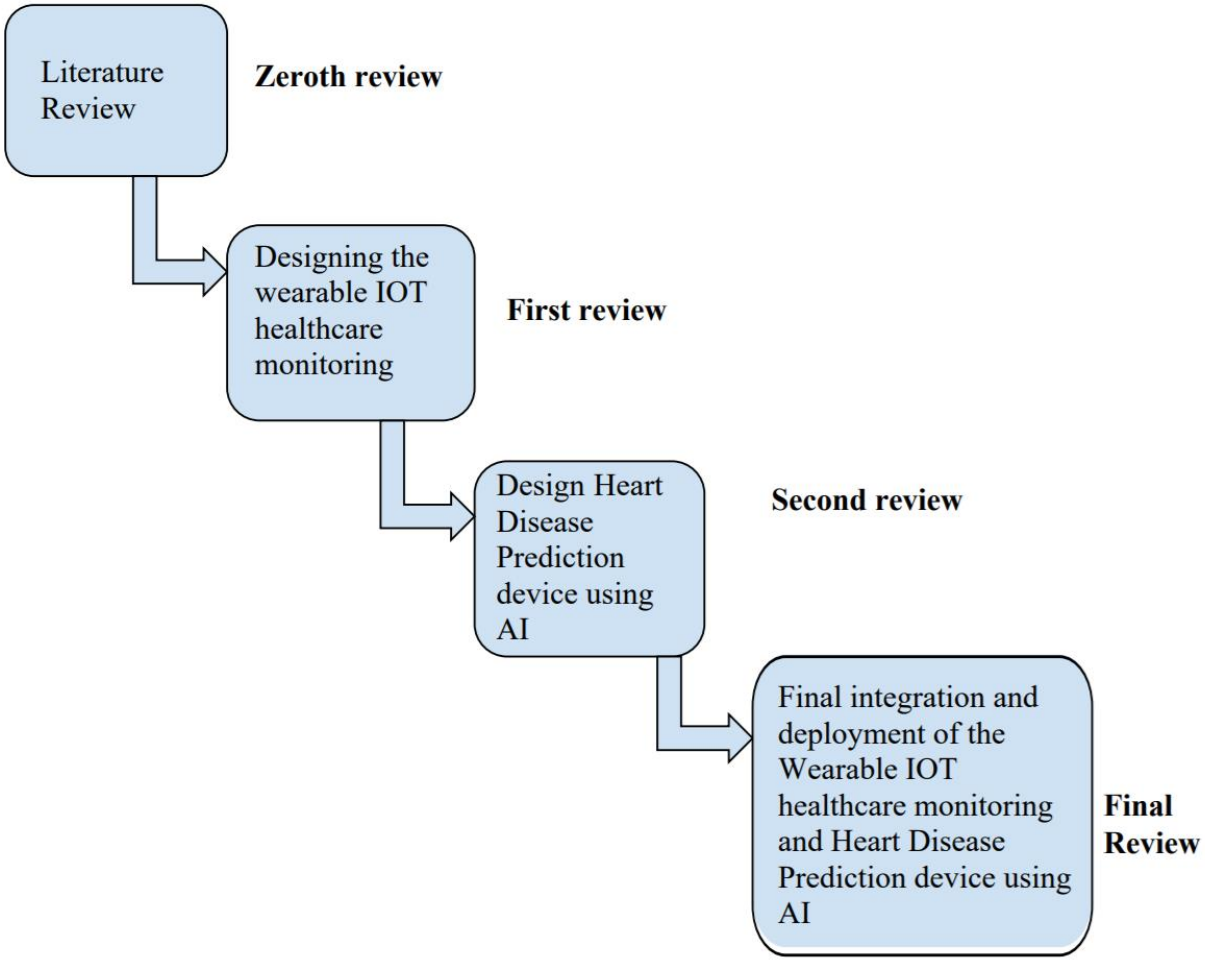
Flowchart and block diagrams of the system to be designed







WORK PLAN:



CONTRIBUTIONS:

Literature Survey	Hemangani, Akshyah
Fabricating the Wearable sensor interfacing	Hemangani, Akshyah
Data Acquisition	Hemangani, Akshyah
Data Processing and Model Construction and testing	Hemangani, Akshyah
Diagnosis and Decision making	Hemangani, Akshyah

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