



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 11, Issue 7, July 2022

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.118



9940 572 462



6381 907 438



ijirset@gmail.com



www.ijirset.com

Effective Heart Disease Prediction Using IBM Auto AI Service

Sri Raksha N S¹, Meghamala C², Smitha B M³, Supritha G R⁴, Prof. Waseem Khan⁵

U.G. Student, Department of Computer Engineering, BIET College, Davangere, Karnataka, India^{1,2,3,4}

Assistant Professor, Department of Computer Engineering, BIET College, Davangere, Karnataka, India⁵

ABSTRACT Exceptional objective of this study is to predict the presence of coronary sickness with lessened number of characteristics using data mining strategies. The term coronary sickness is associated with all different contaminations impacting the heart. The transparency of coronary sickness from various components is an issue which isn't freed from fake suppositions every now and again joined by unpredictable effects. In our work, proposed to conclude the qualities which offer more towards the finish of heart sicknesses, which indirectly could diminish the amount of tests which are expected to have been taken by a patient. The dataset used contains 270 cases. At first, thirteen credits were involved (age, sex, chest torture type, resting circulatory strain, serum cholesterol, fasting glucose, resting electrocardiographic results, most prominent heartbeat, practice started angina, hopelessness provoked by training relative with rest, slant, number of vessels concealed by fluoroscopy, and exercise thallium scintigraphy slips away). To evaluate the presentation of the model the mindfulness, identity, and not entirely settled. Relationship with various data mining strategies is presented. The reenactment result procured from the model engages to spread out tremendous models and associations between the clinical factors and coronary sickness. Today, clinical advantages have gained impressive headway to treat patients with various diseases. Today, diagnosing patients precisely and coordinating practical meds have turned into all things considered a test. Poor clinical decisions could end continuous' downfall which couldn't happen without serious results by the facility as it loses its standing. The cost to treat a patient with a heart issue is exceptionally high and not sensible by each industrious. To achieve a right and monetarily shrewd treatment, PC based information as well as decision genuinely steady organizations can be made to do the task. Most clinical facilities today use some sort of crisis center information structures to manage their clinical benefits or patient data. IBM Cloud Provide Watson Studio, a data science stage which help Artificial sharp and Machine Learning far easier and speedier. I have used Watson Studio to assessment and predication of coronary episode risk.

KEYWORDS: IBM Cloud, Watson Studio, Artificial Intelligence, Machine Learning.

I. INTRODUCTION

1.1 Artificial Intelligence

Man-made brainpower for the most part alludes to cycles and calculations that can reproduce human insight, including mirroring mental capabilities, for example, discernment, learning and critical thinking. AI and profound learning (dl) are subsets of computer based intelligence. Explicit reasonable utilizations of man-made intelligence incorporate present day web crawlers, individual collaborator programs that figure out communicated in language, self-driving vehicles and suggestion motors, for example, those utilized by spotify and netflix. There are four levels or sorts of artificial intelligence — two of which we have accomplished, and two which stay hypothetical at this stage.

1.2 Machine Learning

More or less, AI is a subset of AI that falls inside the "restricted memory" classification in which the AI (machine) can learn and create over time. There are a wide range of AI calculations, with the three essential sorts being regulated learning, solo learning and support learning.

1.3 Heart Disease

The main piece of human body is the heart which siphons blood to each and every other part. If the heart doesn't work fittingly, by then the brain and various organs will stop working which prompts the downfall of the person inside

several minutes. So appropriate working of the heart is of essential significance. Heart infections have created as one of the most basic justification for death from one side of the planet to the other. In the event that any illness gets anticipated at before stages, it becomes more straightforward to find or apply a fix before it gets perilous. Essentially, on the off chance that a cardiovascular illness is anticipated before, it becomes more straightforward to track down a fix. This kind of forecast issue, connected with clinical analysis goes under the part of software engineering i.e., bioinformatics. In bioinformatics, for expectation, we want past verifiable information of the patient and some example matching calculations which can be prepared on the particular information to produce results. In facilities and wellbeing focuses, a ton of patients are being analyzed day to day so there is a great deal of information assortment, for instance, as Medical Reports. Assortment of information from these reports can be utilized for extricating information from information.

Heart disease found to be most occurred disease on people of all age groups for the past many years. It is found to be most major threat by the World Health Organization (WHO). It is confirmed that the major reason for the 41% of deaths happened in real world is the heart attacks, strokes and other circulatory diseases. This surveyed and proved by the European public health alliance. Thus it is more essential to predict the occurrence of heart disease in the accurate manner with the consideration of the various security threats. Heart disease consists different kind of symptoms before it happens based on human health. It makes more difficult to predict the heart disease accurately due to presence of various kind of symptoms. Manual involvement of doctors would make this process easier where they can manually assign weight values to the attributes based on their important level. This would make heart disease prediction process more flexible and convenient.

II. RELATED WORK

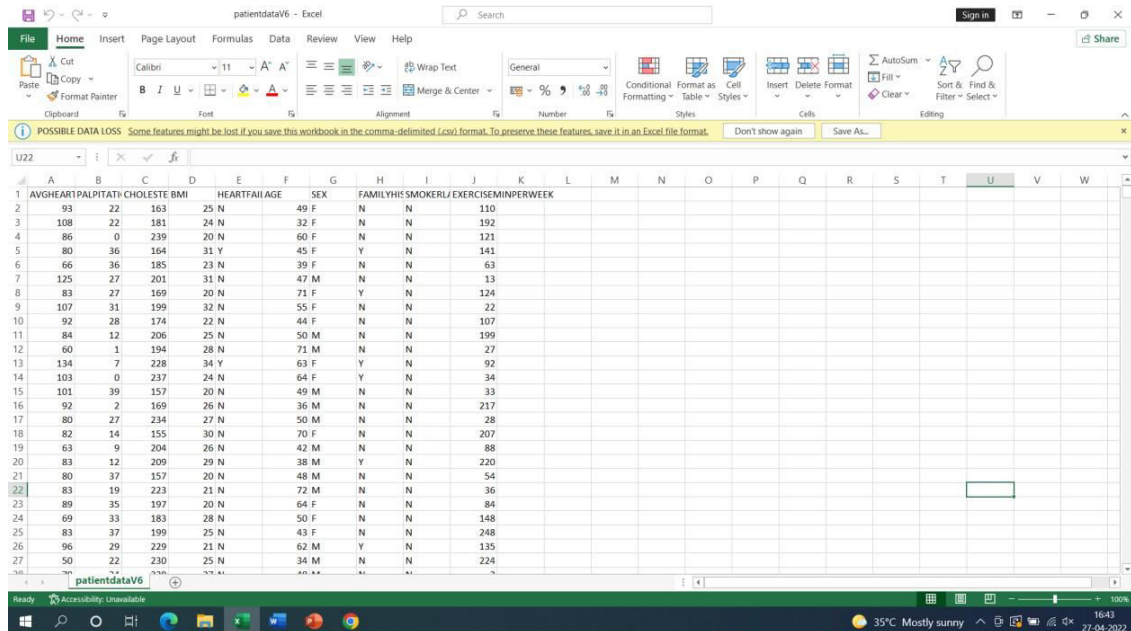
Mangesh Limbitote , Dnyaneshwari Mahajan , Kedar Damkondwar , Pushkar Patil, 2020, A Survey on Prediction Techniques of Heart Disease using Machine Learning, International Journal of Engineering Research and Technology (IJERT) Volume 09, Issue 06 (June 2020), [1]. Yahaya, Lamido, Nathaniel David Oye, and Etemi Joshua Garba. "An expansive study on coronary sickness assumption using data mining and AI methodologies." American Journal of Artificial Intelligence 4.1 (2020): 20-29.[2]. Marimuthu, M., et al. "An overview on coronary sickness conjecture using AI and data assessment approach." International Journal of Computer Applications 181.18 (2018): 20-25.[3]. AbuKhoua, Eman, and Piers Campbell. "Farsighted data mining to help clinical decisions: A layout of coronary ailment assumption systems." 2012 International Conference on Innovations in Information Technology (IIT). IEEE, 2012. [4]. Maheswari, Subburaj, and Ramu Pitchai. "Coronary disease assumption system using decision tree and blameless bayes estimation." Current Medical Imaging 15.8 (2019): 712-717.[5].

III. METHODOLOGY

Log in to IBM account and Create IBM Watson Studio and Node-RED Service then Create a Watson studio project Once the project has been created ADD Auto AI Experiment and Run the Auto AI Experiment to build a Machine learning model on the desired dataset, Save the model and Deploy the model as a web server and generate scoring End Point. Now, Create a WEB application Using Node-RED to take user input and showcase Prediction on UI.

In this Activity, We gonna build a machine learning model that predicts heart failure based on the following parameters

1. Average heartbeats per min
2. Palpitations perday
3. Cholesterol
4. BMI
5. Age
6. Sex
7. Family History
8. Smokerlast5yrs
9. Exerciseminperweek



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	AVGHEARTPALPITATI	CHOLESTE	BMI	HEARTFAILAGE	SEX	FAMILYHIS	SMOKER/L	EXERCISEMIN	PERWEEK														
2	93	22	163	25 N	49 F	N	N	110															
3	108	22	181	24 N	32 F	N	N	192															
4	86	0	239	20 N	60 F	N	N	121															
5	80	36	164	31 Y	45 F	Y	N	141															
6	66	36	185	23 N	39 F	N	N	63															
7	125	27	201	31 N	47 M	N	N	13															
8	83	27	169	20 N	71 F	Y	N	124															
9	107	31	199	32 N	55 F	N	N	22															
10	92	28	174	22 N	44 F	N	N	107															
11	84	12	206	25 N	50 M	N	N	199															
12	60	1	194	28 N	71 M	N	N	27															
13	134	7	228	34 Y	63 F	Y	N	92															
14	103	0	237	24 N	64 F	Y	N	34															
15	101	39	157	20 N	49 M	N	N	33															
16	92	2	169	26 N	36 M	N	N	217															
17	80	27	234	27 N	50 M	N	N	28															
18	82	14	155	30 N	70 F	N	N	207															
19	63	9	204	26 N	42 M	N	N	88															
20	83	12	209	29 N	38 M	Y	N	220															
21	80	37	157	20 N	48 M	N	N	54															
22	83	19	223	21 N	72 M	N	N	36															
23	89	35	197	20 N	64 F	N	N	84															
24	69	33	183	28 N	50 F	N	N	148															
25	83	37	199	25 N	43 F	N	N	248															
26	96	29	229	21 N	62 M	Y	N	135															
27	50	22	230	25 N	34 M	N	N	224															

Figure 3.1: Dataset Description

IV. EXPERIMENTAL RESULTS

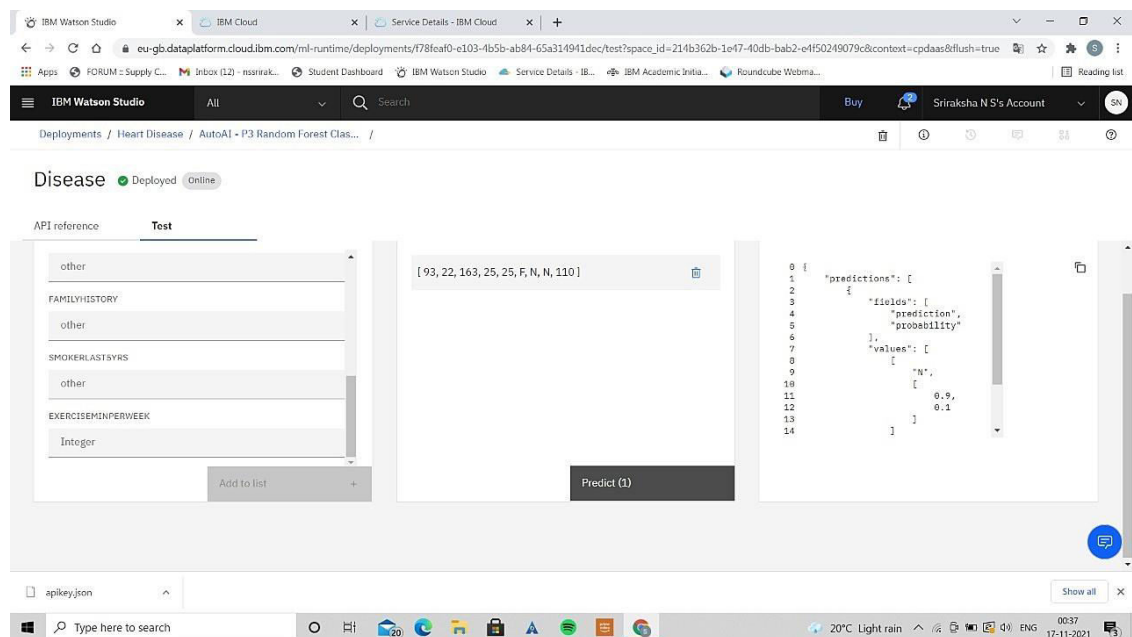


Fig 4.1: IBM Deployment

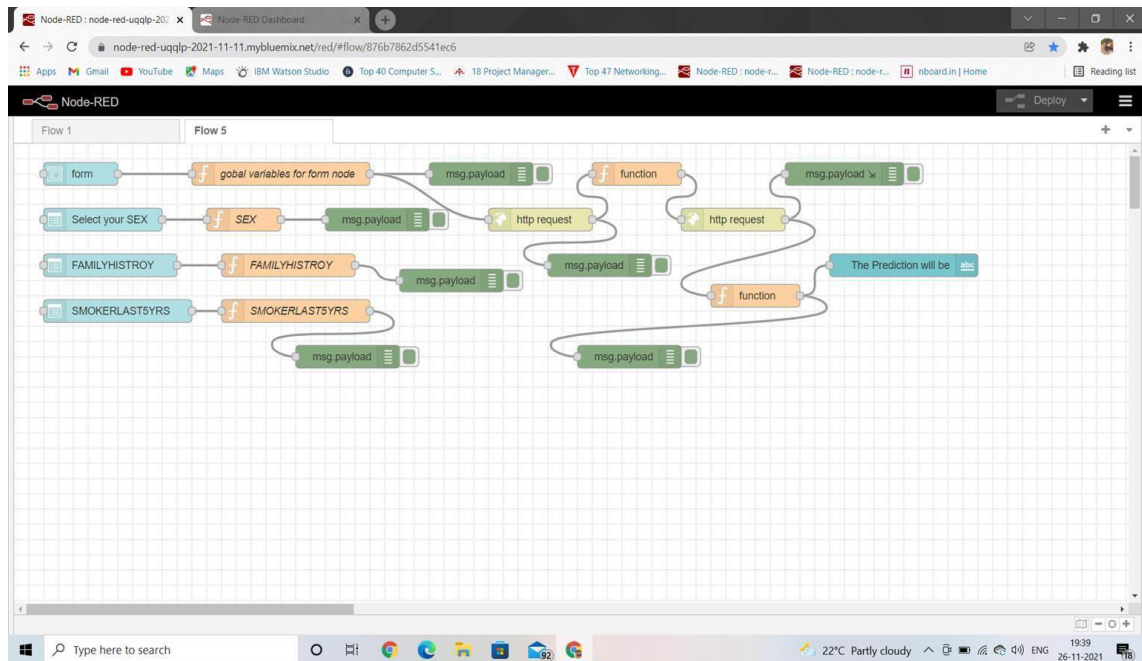


Fig 4.2: Node - Red Creation

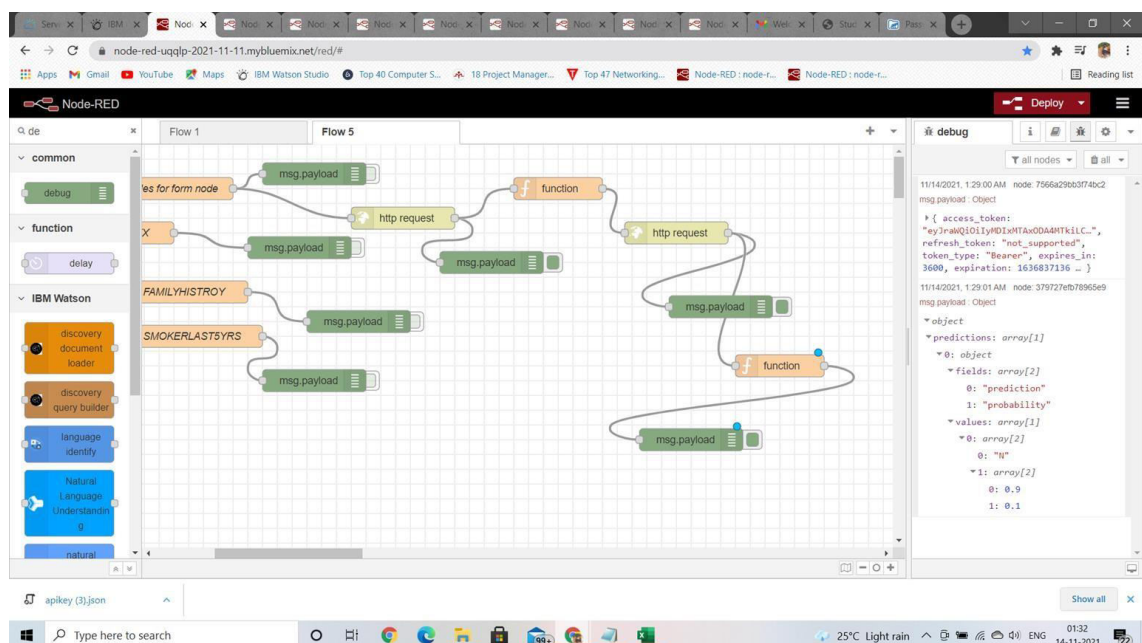


Figure 4.3: Output of access token along with the path of the object

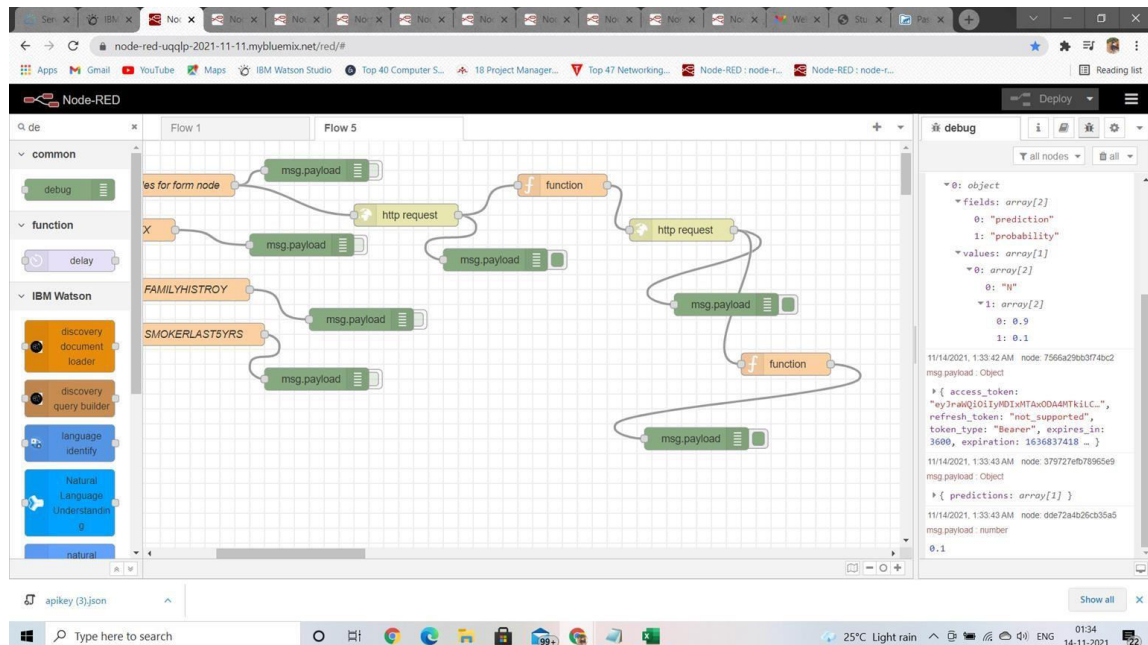
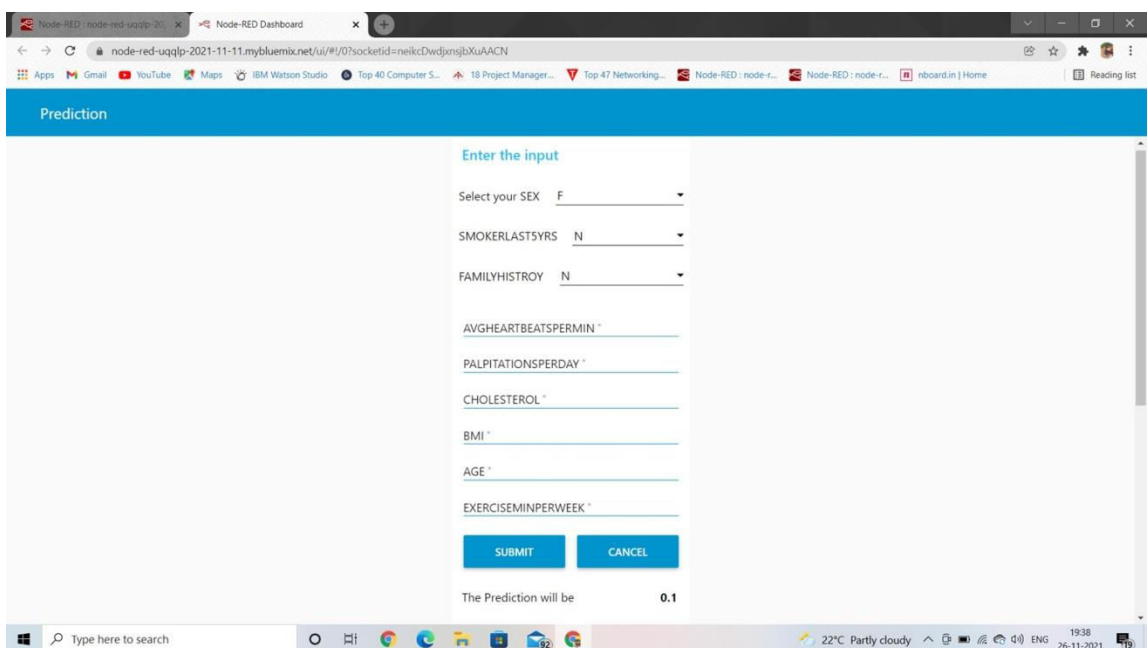


Figure 4.4: This above figure display Output of the Prediction Column i.e Heart Failure



The screenshot shows a web application titled 'Prediction'. It has a form with the following input fields:

- Select your SEX: F
- SMOKERLAST5YRS: N
- FAMILYHISTROY: N
- AVGHEARTBEATSPERMIN: 0.1
- PALPITATIONSPEERDAY: 0.1
- CHOLESTEROL: 0.1
- BMI: 0.1
- AGE: 0.1
- EXERCISEMINPERWEEK: 0.1

There are 'SUBMIT' and 'CANCEL' buttons. Below the form, it says 'The Prediction will be 0.1'.

Figure 4.5: Output of the prediction Column



V. CONCLUSION

Heart disease prediction is the most concerned research issue focused by the various researchers to perform early prediction of heart disease. There is multiple research methods has been introduced earlier for prediction of heart disease in the accurate manner. In this research analysis paper, analysis multiple existing research methodologies has been discussed in terms of their working procedure and the performance metrics utilized. This analysis work also shows overview about their working procedure along with merits and demerits. This work provides the discussion about the heart disease prediction in sectionalized way. Those are novel feature selection techniques; risk factors identification and prediction procedures. These research methods are defined and indicated with their faults and advantages. The overall review of the research methods has been conducted in the matlab simulation environment from which it can be found that improvement of the research methodologies. This evaluation has been carried out based on merits and demerits of research methods that have been discussed.

REFERENCES

- [1] Mangesh Limbitote , Dnyaneshwari Mahajan , Kedar Damkondwar , Pushkar Patil, 2020, A Survey on Prediction Techniques of Heart Disease using Machine Learning, INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) Volume 09, Issue 06 (June 2020).
- [2]Yahaya, Lamido, Nathaniel David Oye, and Etemi Joshua Garba. "A comprehensive review on heart disease prediction using data mining and machine learning techniques." American Journal of Artificial Intelligence 4.1 (2020): 20-29.
- [3] Marimuthu, M., et al. "A review on heart disease prediction using machine learning and data analytics approach." *International Journal of Computer Applications* 181.18 (2018): 20-25.
- [4] AbuKhoua, Eman, and Piers Campbell. "Predictive data mining to support clinical decisions: An overview of heart disease prediction systems." *2012 International Conference on Innovations in Information Technology (IIT)*. IEEE, 2012
- [5] Maheswari, Subburaj, and Ramu Pitchai. "Heart disease prediction system using decision tree and naive bayes algorithm." *Current Medical Imaging* 15.8 (2019): 712-717.



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor: 8.118



ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 **9940 572 462**  **6381 907 438**  **ijirset@gmail.com**



www.ijirset.com

Scan to save the contact details