

# **SYNOPSIS**

## **Report on**

### **Disease Prediction and Analysis**

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# ABSTRACT

Nowadays, more people are affected by various diseases such as blood pressure, heart failure, etc. The early prediction of diseases tends to increase the survival of affected patients by allowing preventive action. A key element for this purpose is the digitalization of the healthcare system through the Internet of Things (IoT) and cloud computing. Nevertheless, there are major problems in the cloud with the IoT due to false predictions and errors in medical data, which results in taking a longer time to receive patient details and not providing the best outcome. Data transfer through the cloud can also be hacked by attackers due to the lack of security. This leads to a challenge for medical experts to predict the diseases accurately for a specific patient. Therefore, a novel hybrid elapid encryption (HEE) method was proposed for improving the security of cloud systems. In addition, the affected person's disease and the severity risk level were predicted and classified using the proposed novel hybridization technique of the generalized-fuzzy-intelligence-based gray wolf ant lion optimization (GFI-GWALO) method. After the disease is predicted, the alert signal is provided to the patients. Moreover, this proposed research was implemented on PYTHON. Then the proposed simulation outcome was compared with various conventional methods and showed that the proposed method has the best outcomes in terms of its security and disease prediction with 80 ms of encryption time and 78 ms of decryption time, 100% accuracy, 99.50% precision and 8 ms of processing time.

**Keywords:** *Internet of Things; generalized-fuzzy-intelligence-based gray wolf ant lion optimization; big data; healthcare system; cloud storage and hybrid elapid encryption*

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# INTRODUCTION

Nowadays, more people are affected by various diseases such as blood pressure, heart failure, etc. The early prediction of diseases tends to increase the survival of affected patients by allowing preventive action. A key element for this purpose is the digitalization of the healthcare system through the Internet of Things (IoT) and cloud computing. Automated Disease Detection System (ADDs): A Sensor-Input-based Reliable Model for Disease Detection. Human health is wealth; there is nothing more valuable than good health. Researchers have devoted vast efforts in proposing new policies, algorithms, systems and architectures for healthcare. The objective of this work is to propose an intelligent technique which can be used for determination of diseases in human body. The problem of health monitoring has been taken as it is one of the challenging problems in rural areas where most of the times people do not get proper treatment and are not financially sound to visit doctors in city. Many lives are lost due to lack of proper treatment which in turn can be saved if proper prognosis is done on time. IoT devices enable users to reduce costs related to health monitoring and risk related to health. Cloud-based storage of Patients' parameters for computer-based disease prediction method. Aid to both: physicians and patients for quick medical assessment. Timely and Effective medical treatment to patients using IoT. Furthermore, the IoT collects an enormous amount of data in the medical care system, and data science technology can provide an essential method to develop more intelligent IoT devices. Machine learning and data mining are a branch of data science, which is used to estimate new patterns and guidelines from data. The enormous amount of data from the clinical system is significantly handled by the ordinary machine learning method. Traditionally, various techniques have been utilized such as classification methods, the neural network (NN) approach, fuzzy methods, heuristic techniques and clustering techniques for disease prediction. However, the conventional methods have not performed efficiently because, if some of the data are missing, the accuracy of the conventional methods of disease forecasting is diminished and a high error rate is produced.

## LITERATURE REVIEW

A disease is a pathological condition in which the part of body or organ and the immune system may does not work properly. This is due to some infection, hereditary or genetic disorders. Most of the patients caused by this disease may cause sudden death. Heart disease is also known as coronary artery disease which is caused by the artery and veins becomes narrow and this caused the circulation of blood flow to the heart which may cause heart attack. There are many techniques are proposed to predict the heart disease but their architecture and calculation is very complex. To overcome this problem, Kavitha Burse *et al* proposed the various preprocessing methods for neural network based heart disease prediction. PCA and LDA preprocessing method are used to reduce the dimensionality of the dataset and it achieves 94.53% classification accuracy for diagnosis of heart disease. The increasing growth of infectious disease causes a serious problem in both the humans and animals. The main reason is the development of resistance mechanism in infectious pathogens against broad spectrum drugs. The shortfall of epidemiological study level is still observed due to gap between patients and governmental authorities assigned for treatment. In addition, the handling, analyzing and updating of large dataset is time consuming and labor intensive. To overcome such limitations Tulika and Pallavi proposed the machine learning toward infectious disease treatment. To understand the underlying problem, mining of the diagnostic techniques was performed focused to execute the correct disease diagnosis in different symptoms from the patient.

# PROJECT OBJECTIVE

In this research work, Cloud IoT is integrated with various data analytics data tools and techniques in healthcare systems and various appropriate precision data analytics algorithms.

In rural and tribal areas, where the economy crises and illiteracy forces people to take wrong decisions and advice regarding healthcare, this research work can prove very useful.

Inaccessibility - Inability to reach services to all corners of the rural hinterland. Some of our villages are situated at remote locations that not many doctors are willing to go to. Awareness -

The main challenge for rural healthcare in India is lack of knowledge and awareness. People tend to lose hope easily.

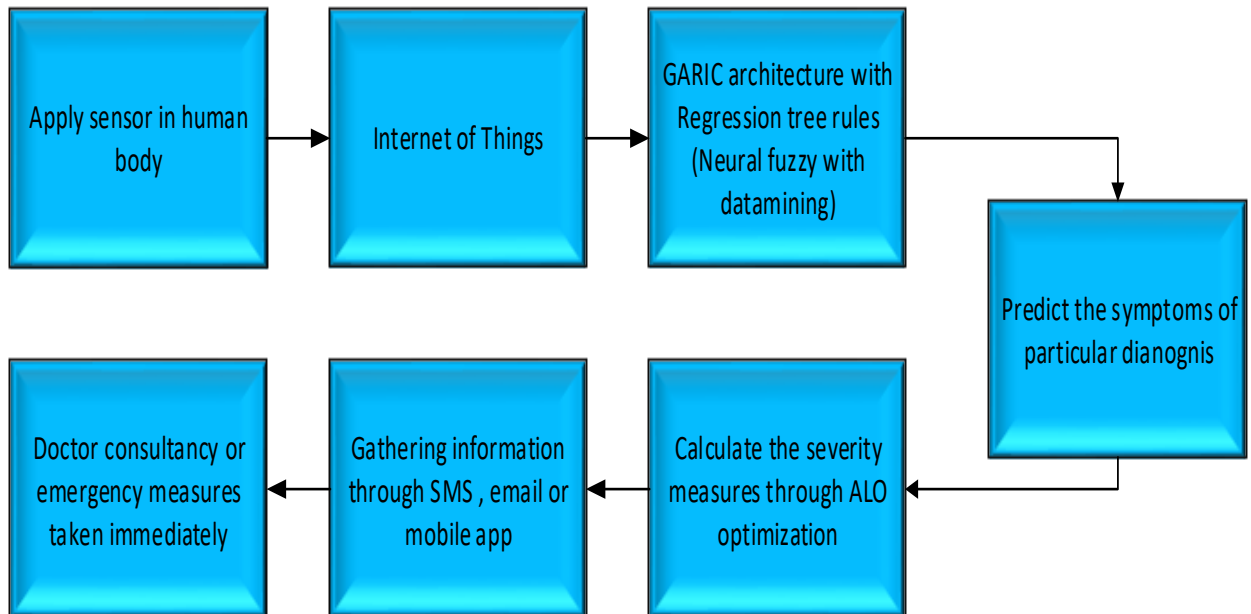
The major aim of this work will be summarized as following:

- To obtain the real-time medical information about a patient via IoT.
- Processing and classification of information gathered about the patient.
- To interpret and predict any disease or disorder in preliminary stage itself using the data mining techniques that will also provide the approach advantageous for decision making.
- To provide Internet of Things based healthcare solutions at anytime and anywhere.

## RESEARCH METHODOLOGY

The information will be gathered from regular visit of doctors and reviewing existing literature work related to it, online medical support provided by different websites. In our research here we introduce machine learning neuro fuzzy based algorithms Generalize approximate Reasoning base Intelligence Control with regression rules to predict the disease early. To calculate the severity we use Ant Lion Optimization algorithm. we have to inject the sensor in human body, sensor function is linked with IoT (Internet of Things) like mobile app or any other, also it connected to service provider or hospitals.

Thus if the people has affected by some diseases they will get warning by SMS, emails..etc, after that they got some treatments and advisory of doctors.



## **RESEARCH OUTCOME**

Proposed research work is elaborated using PYTHON , to calculate the efficiency of proposed techniques with existing techniques in the terms of.

- Accuracy
- Predicting rate
- Severity
- Sensitivity
- Specificity

## **PROPOSED TIME DURATION**

Proposed time duration for this work 1.5 months.



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