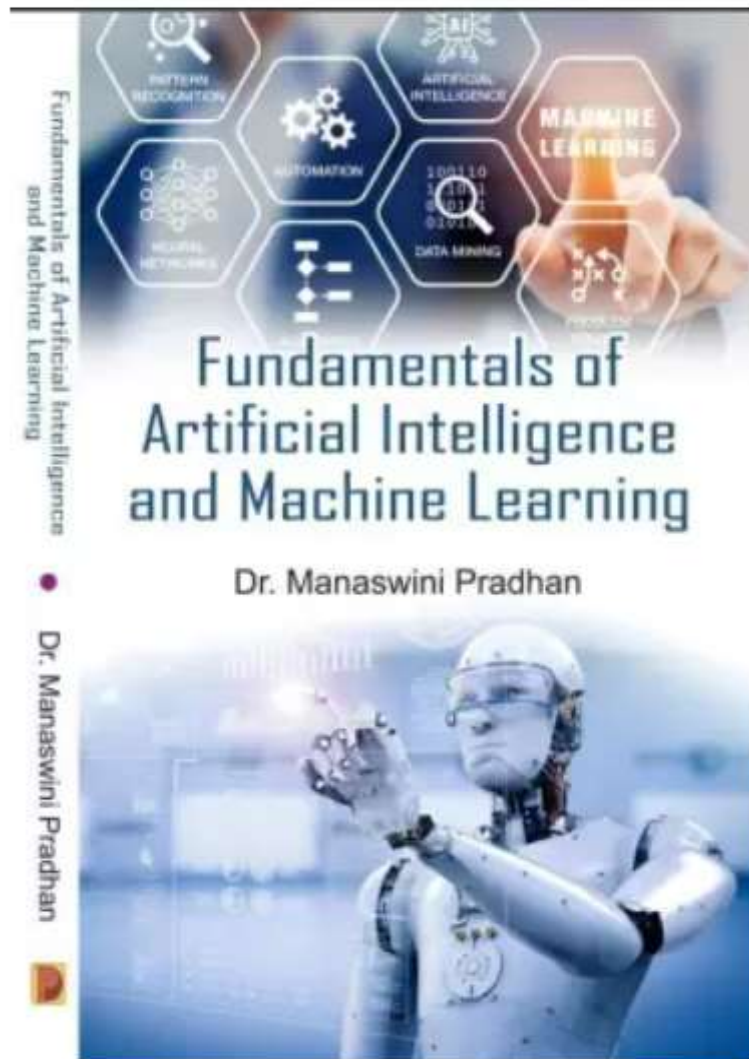


SL NO. 19



## SL NO. 20

# **A Detailed Schematic Study on Feature Extraction Methodologies and its Applications: A Position Paper**

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**Abstract:** Feature extraction is stated to be one of the most important aspect in the field of machine learning, image processing and pattern recognition. In these fields, as the dimension of the data increases, it becomes highly important to provide a reliable analysis for growing. The process of feature extraction mostly starts from basic dataset and slowly it builds features derived from the data to make an informative learning step for human reading. In order to present this process of learning, we thought of providing a position paper which will discuss all the criteria, information, methodology and existing work in the area of feature extraction in different fields and domain. A clear, descriptive analysis is presented that discuss about the feature extraction methods for selecting significant features that will improve the quality of the results.

**Keywords:** Dimensionality, ORB-PCA, PCA,ECG,Classification

## A Detailed Schematic Study on AI in managing Hypertension: A Position Paper

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### **Abstract:**

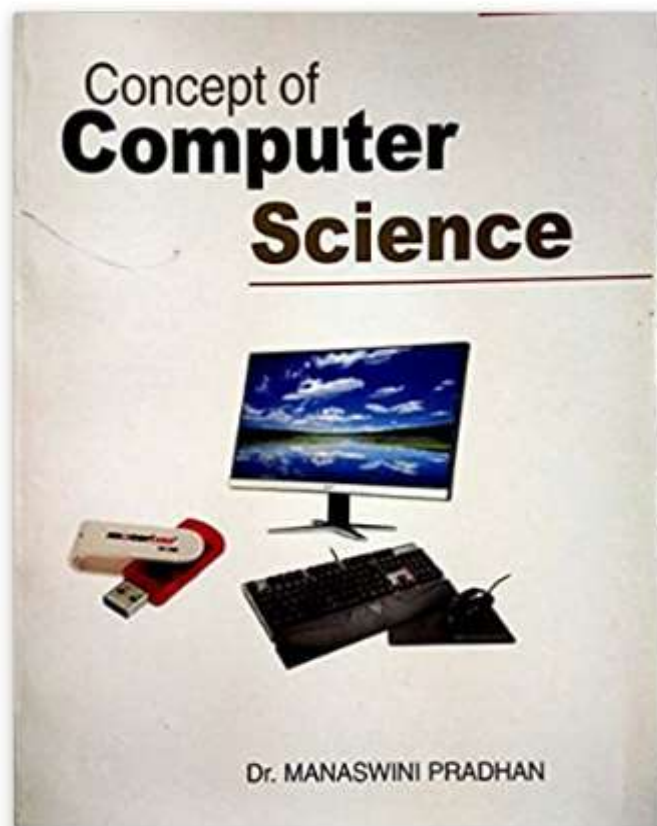
Hypertension remains one of the reason of mortality in the last hundred years. Despite a lot of research and new pervasive medicines, still it is common to see the fatality caused by hypertension. With the evolution of Artificial Intelligence and Machine learning and its significant use in the last decade showed promising results in many fields including Medicine and health care domain and a lot of challenges has to be overcome. Availability of public Dataset has helped researchers a lot in exploration and implementation. AI has impacted everyone's life. AI has still a long way to cover in the field of Health care domain. In this review we provide practical approaches on Artificial intelligence as applied to hypertension. We will focus on the roadblocks and the proposed solutions for the treatment of Hypertensions. We need a robust system comprising of both scientific as well as clinical expertise followed by extensive validations to have a sustainable solution to Hypertension using Artificial Intelligence.

**Key Words:** artificial intelligence ■ blood pressure ■ clinical trial ■ hypertension ■ machine learning

### **1. Introduction**

Based on World Health Organization data, high blood pressure (BP) or hypertension is a fatal health issue. This has impacted more than 1.1 billion people throughout the world, out of which two-thirds belongs to low and middle class families [1]. On top of that it leads to heart attack [2], diabetes [6], heart failure [3], and coronary heart disease [5] various kidney disease [4], and heart strokes [7]. It is been studied that around 45% of deaths for heart disease with 51% of deaths because of stroke [1]. However managing Hypertension is tedious and cost effective as well. The hypertension is measured with a device known as a sphygmomanometer, which can be operated manually or electronically .It checks for the systolic and diastolic readings [9]. Some more important factors for hypertension are gender, age , body mass index (BMI), obesity, Cholesterol , stress, physical exercise , lipoproteins , , smoking, and family history [1].

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## **Adaptive Neural Network Classifier-Based Analysis of Big Data in Health Care**

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Manaswini Pradhan

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/intechopen.77225>

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### **Abstract**

Because of the massive volume, variety, and continuous updating of medical data, the efficient processing of medical data and the real-time response of the treatment recommendation has become an important issue. Fortunately, parallel computing and cloud computing provide powerful capabilities to cope with large-scale data. Therefore, in this paper, a FCM based Map-Reduce programming model is proposed for the parallel computing using AANN approach. The FCM based Map-Reduce, clusters the large medical datasets into smaller groups of certain similarity and assigns each data cluster to one Mapper, where the training of neural networks are done by the optimal selection of the interconnection weights by Whale Optimization Algorithm (WOA). Finally, the Reducer reduces all the AANN classifiers obtained from the Mappers for identifying the normal and abnormal classes of the newer medical records promptly and accurately. The proposed methodology is implemented in the working platform of JAVA using CloudSim simulator.

**Keywords:** fuzzy C-means clustering (FCM), adaptive artificial neural networks (AANN), whale optimization algorithm (WOA), parallel computing, Map-Reduce model

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### **1. Introduction**

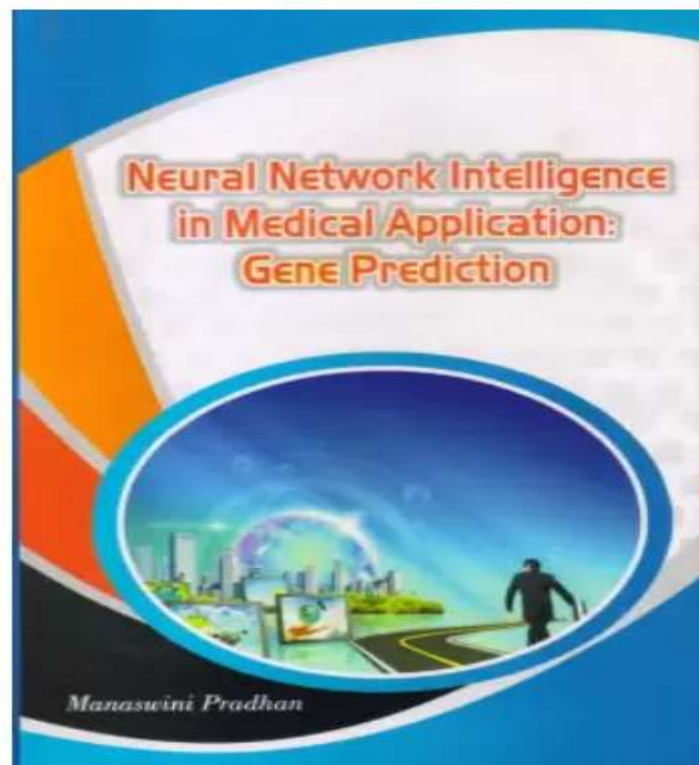
Big Data has been characterized by its three properties i.e. 1. Volume, 2. Velocity and 3. Variety. Volume refers to the huge amount of data being generated by several sources. Velocity refers to the rate at which this data is being generated and the variety refers to the different type of the data being used [1]. Now a days with so much of data all around the world, the trend in healthcare is shifting from cure to prevention. Hospitals and healthcare systems are good repositories of big data (like patient records, test reports, medical images etc.) that can be

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## **Chapter 11**

# **Status and Challenges on Adaptation for Indian Healthcare Services with Data Mining Technique**

**Manaswini Pradhan**

**Abstract** Healthcare providers need to be up-to-date using new inventions and methods of treatment, and for this the health-related institutions have to consistently accumulate the healthcare data. Extracting medical knowledge by structured data mining of many medical records is important for clinical diagnosis support. In the proposed technique, the primary source of data mining is used. In the present study, the best hospital is determined through the mining of data from the questionnaire survey made in the Odisha region. Initially, each data is assigned with the score value based on the required preferences. Moreover, prefix spanning is used for rule generation and the score values were added, and, finally, the best hospital is found with the hospital having highest scores. The proposed technique is implemented in the working platform of JAVA and the results were analyzed.

**Keywords** Prefixspan algorithm • Sequential data • Healthcare • Datamining • Survey research

## **1 Introduction**

The healthcare industry undergoes tremendous pressure to deliver quality service to patients and doctors across the globe. A healthcare cloud is designed as an inter-connection of extensive number of computers and servers specifically dedicated to meet the needs of the healthcare industry. The healthcare service is delivered via an Internet connection to the user who can be either a doctor or a patient (Parekh and Saleena 2015). We all have witnessed the various flaws of our medical system. The private hospitals are standing with the only motive to earn as much money as they can because they knew that no one try to save money for the sake of their life.

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Century*, Understanding Complex Systems, DOI 10.1007/978-3-319-55774-8\_11

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# Chapter 14

## Indian Healthcare Service Management Through Data Mining: Datamining for Healthcare Services

**Manaswini Pradhan**  
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### **ABSTRACT**

*The main intention of our method is to provide better Healthcare services over the rural areas in terms of prediction of the chief hospitals with required basic facilities around that particular area. Accordingly, a Questionnaire survey is made for collecting the relevant hospital data around the Odisha region. Then, the concept of data mining is utilized in order to extract the data from the Questionnaire. Further, Incremental Spanning algorithm is introduced here for the mining of data from the Questionnaire. In the Questionnaire, appropriate score values were assigned for each category based on the requirement. Moreover, the hospital satisfying all the required components within the Questionnaire have to be determined for predicting the better hospitals. The Genetic Algorithm is introduced so as to determine the maximum of the score values obtaining for the input hospital data. Finally, the ranking of first five supreme hospitals is determined around the Odisha region.*

### **1. INTRODUCTION**

Health care services in India have undergone a vast change over the last few decades and encompass the entire nation. India's health care system was carefully structured so that it can provide primary, preventative, and curative health care within a reasonable distance of the population even in remote, rural areas. Delivering affordable health care to India's billion plus people presents enormous challenges and opportunities for the medical community (Aliman & Mohamad, 2016; Silas & Rajsingh, 2016).

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