**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**

**ENGINEERING**

**IBM – LITERATURE SURVEY**

**PROJECT TITLE**

**ANALYTICS FOR HOSPITALS HEALTH CARE DATA**

(2022-2023)



**Guide Name: C. Vanaja**

**SUBMITTED BY**

**SWATHIGA G V (19105111)**

**THAMBU GANESH T (19105114)**

**THARANI K (19105115)**

**THARUN KUMAR R (19105116)**

**FINAL YEAR B.E. (ECE)**

**PAAVAI ENGINEERING COLLEGE,**

**Paavai Nagar, NH-44, Pachal, Namakkal-637 018, Tamil Nadu**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.NO** | **TITLE OF THE PROJECT** | **ADVANTAGE** | **DISADVANTAGE** | **TECHNOLOGY**  **USED** |
| **1** | A Survey of Big Data Analytics in Healthcare and Government | To successfully identify and implement big data solutions and benefit from the value that big data can bring, government need to devote time, allocate budget and resources to visioning and planning.  The problem is not the lack of data but the lack of information that can be used to support decision-making,  planning and strateThe problem is not the lack of data but the lack of information that can be used to support decision-making, planning and strategy | The problem is not the lack of data but the lack of information that can be used to support decision making, planning and strategy | Big Data Analytics  using Hadoop plays  an effective role in  performing  meaningful  real-time analysis on the huge volume of data and able  to predict the  emergency situations before it happens. |
| **2** | A Data Analytics  Suite for Exploratory Predictive, and Visual Analysis of  Type 2 Diabetes | This offers huge advantage  that had not been previously  possible for a more personalised approach to treating T2D that  will be safer and more beneficial for the patient as it will minimise side effects and offer faster, more effective treatment. It will also provide economic advantages  to the healthcare system. | There is need to  Building and training  the model on larger data  bases to increase the prediction accuracy and develop more robust prediction models are  achieve effectively. | classification of T2D  patients into required categories and identifying  associations to  a condition of  interest, analysis of  T2D database to  build a predictive  model that can assess risk of patients to  T2D related  complications,  and prediction of  patients’ response to  a specific line of  treatment plan**.** |
| **3** | Healthcare Data  Analytics  Framework  for the Opioid  Crisis | Research and prediction of  disease. Automation of  hospital administrative processes Early detection of disease. Prevention of unnecessary doctor's visits. Discovery new drugs. More accurate calculation of health  insurance rates. More effective sharing of patient  data | Lack of standardization  in toxicology and  coding practices among medical examiners and coroners can lead to misclassification of  cause of death, poor identification of types  of opioids involved in overdoses, and  undercounting of  intentional poisonings**.** | We then used the  Crimson Hexagon  platform to collect data based on a search query informed by a  drug abuse ontology developed using the identified terms. We subsequently  pre-processed the data and examined the quality using an  evaluation matrix.  Finally, a suitable data analysis approach  could be used to  analyse the collected  data |
| **4** | Analysis of Research in Healthcare  Data  Analytics | The paper has listed  some data analytics  tools and techniques  that have been used to improve healthcare performance in  many areas such as: medical operations, reports,  decision making, and prediction and prevention system | The problem is how to  handle this with older  people who are less  attached and  hard to convince to  adopt new healthcare technologies and tools,  as they consider this as  a medical care  issue involving medical staff and excluding their role in the medical care process. | This paper is  proposing a technique  that will promise to  leverage large amount of data properly, since doctors and  nurses will be able to determine diseases and risks easily like some  certain types of cancer, diabetes and blood pressure, as well as provide needed treatment in the right time. |
| **5** | The Use of Real-World Data for Personalized  Medicine. | Real-world data by also helps researchers who are interested in less common conditions that aren't as likely to be studied in clinical trials. With access to thousands of patients' data,  lack of clinical trials becomes less of a barrier for researchers interested in rare diseases. | Limitations of RWE  studies can include low internal validity, lack of  quality control  surrounding data  collection and  susceptibility to  multiple sources of bias for comparing outcomes**.** | Big data is already  starting to demonstrate its economic and clinical value in the field of personalized medicine. However, to realize its full potential, we post that “Smart data” is a  requirement to enable down-stream analysis and extraction of  meaningful  information. |
| **6** | How Data Analytics can help in Decision  Making in Healthcare | The advancement of technology  and other factors are compelling healthcare providers to adopt  advanced communication and collaboration systems across their settings. | The big question in front  of these healthcare  organizations is how to  crunch these numbers  and extract meaningful knowledge from health  Big Data, identify and  develop new decision  models and how to  manage Big Data | Healthcare providers  are adopting healthcare IT solutions such as EMR, EHR and HIE. |
| **7** | Big Data  analytics for healthcare | One advantage of Cox models is that there is no re-training needed if we change the time of interest (from 30 days to 90 days) | Adding claims data for  a partial set of patient | The Performance  of regularized Cox algorithms is  better than that of simple Cox  regression and other  standard predictive algorithms |
| **8** | Advanced  Analytics in Healthcare | Machine learning presents  enormous opportunity within the healthcare industry to reduce inefficiency and costs while increasing the quality and accuracy of patient care | The business people,  it's often a challenge just  to communicate the  clinical side in a way that  doesn't overwhelm them. But it is a little bit of an art. | Machine learning  presents enormous opportunity within the healthcare industry to  reduce inefficiency and costs while increasing the quality and accuracy of patient care |
| **9** | Proposed Application of Big Data Analytics in Healthcare at Maharaja Yeshwantrao Hospital | Big data is characterized as  extremely large data sets that  can be analysed  computationally to find patterns, trends, and associations,  visualization, querying,  information privacy and  predictive analytics on  large wide spread collection  of data | There is a lack of  portability of EHRs to  all over the country or  world for better  treatment anywhere  anytime without  carrying past treatment  record of individual | Big data analytics  can be done using  Hadoop which plays  an effective role in performing  meaningful real-time  analysis on the large  volume of this data to predict the emergency situations before it happens. |
| **10** | The Impact of Big Data In Healthcare  Analytics | We highlighted the shortcoming of the existing Big Data analytics tools in dealing with the evolution of data. The proposed IMP Big Data storage is a promising solution for dealing the heterogeneous health data. | In terms of better query performance and  scalability in distributed  systems. To proposed  prototype will compare  the scalability of the  proposed framework with the other platform. | This paper aims to  present  state-of-the-art  Big Data analytics  tools and presented the Intelligent Medical Platform (IMP) as a case study in dealing  with the multimodal  data. |