

Recapture Organism Using Genetic Mutation To Hypothesize And Outwit Alzheimer' s Disease

¹Suganya,²Dr.K.Rajeswari Msc, M.Phil, Ph.D

¹Research Scholar, PG & Research Department of Computer Science

²Associate Professor, PG & Research Department of Computer Science

^{1,2} Tiruppur Kumaran College for Women, Tiruppur, Tamil Nadu, India

Corresponding Author: Suganya

Abstract : New hierarchy lying on gene mutation to recapture the cell membranes damages and detection of Alzheimer' s disease in an early stage. Even though, the system detects the instruction of the program code using 0' s and 1' s as a unique representation over them as across with some key as the knowledge base. The human brain detects all the sensible features of cell (organism) region identification as an exclusive Identification. Some features of the region processing would be applied like request and response, Or like providing instructions (like one way). The main focus towards the disease is based on applying the gene features to recapture or particularly identify the region based on the neuron system to recognize the mutation type as affected especially for Alzheimer' s disease. Among different Technical approaches and methods in data mining for these aspects, data classification along with the rule predication will more supportable and useful for the further progressiveness of a highway. Learning the functionality features based on the gene type Psen1, Psen2, APP, MAPT, GRN towards protein production towards the brain for the particular cell membranes provide more knowledge about each and every Exon and intron in details. Microarray gene features based applications are liked to implement to recognize the highest pattern of mutation stage for memory loss with the hypothetical situation.

Keywords - Data Classification, Exon, Gene Type, Mutation, Rule predication.

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I. INTRODUCTION

Many Medical aspects are developed as progressively to ensure the health and growth of the human in the protected way. In the day-to-day life, human invokes his work with more systematic with planned approaches and engage themselves with the activates based on the time and events in his early age. After the age of retirement or in the older aged period of their life, the main problem is occupying the time over them becomes a big question towards them. The mindset of the human easily gets depression based on the health and over-thinking ended them in the brain cultivated area of the particular nerve. A brain function based on nerve system, as nerve is made up of with collection of cell membranes. While physical speaking, the cell requires a sufficient amount of proteins and proper growth for all the nerve system to prolong the life with good health. ALZHEIMER' S DISEASE (AD) affects the memory towards the brain and provides memory loss over them to invoke their day-to-day activities like loved ones, the way of dressing, and favorite' s features like hobbies, drawing as well as car driving. At some circumstances, they will easily recall the long-ago events easily and forget the recent features as often and vice versa. The main focus towards ALZHEIMER' S DISEASE (AD) is based on the nerve damage. ALZHEIMER' S DISEASE (AD) is the detection of some neurological discomfort happens to the non-working process of brain cell which provides remembrance thrashing and cognitive rejection over the brain cells. The deep study on ALZHEIMER' S DISEASE (AD) from the researches says about the fact shows are:

1. It is highly affecting to the older age people.
2. Women are highly affecting ALZHEIMER' S DISEASE (AD) wiser than men.

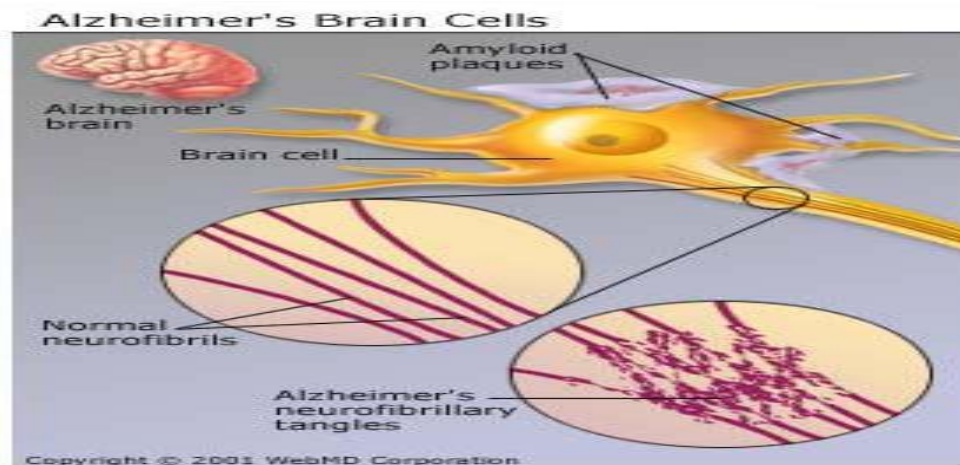


Figure 1: Brain cells of Alzheimer' s

Nerve gets damages based on the aspects as:

1. Tangles towards the nerve cell damages(neurofibrillary)
2. Protein insufficient towards the cell organism as the deposit.
3. Evict towards high blood pressure
4. Due to high cholesterol
5. Based on the gene history
6. Sudden Accidents happen towards the head

II. A DEEP STUDY ON DATA MINING RESEARCH PATTERNS

The team of people who surveyed and reviewed was supported to identify the AD in the early stage using K-Fold Cross-Validation Method. Research entitled [2], the concepts with a detailed approach related to machine learning was applied using the patterns like distanced based algorithm, Support Vector Machines (SVM) and Random Forest to survive based on the classification Problem as in the real world. The main topic line of the research is about Dementia. The research work starts with the basic identification of the syndrome of the exact of Alzheimer' s Diseases. Review mainly focused on the people who have affected with Mild Cognitive Impairment (MCI). The main reason for the subject of the investigation is delayed preventions is not mostly possible to identify the general cause of dementia. The result of Alzheimer Disease is studied over the Magnetic Resonance Imaging (MRI) and the data collection is providing by Alzheimer' s disease Neuro imaging Initiative (ADNI). In the full review of the research, three different set of the dataset is applied like ADNI, ADNI2, and ADNI GO. The research Methodology carried for implementation using Python by using the Classification Algorithms libraries like Numpy, learn and Pandas. All those result values are record based on two classes are Cognitive Normal (CN) and Alzheimer' s disease (AD). K-Fold Cross Validation is applied as per the dataset contents and splitting the data into equal ration .results over each iteration is traced and find out the results to provide accuracy. To conclude the research study, the main purpose of the work is to reduce the risk factor and to visualize the real diagnosis and the treatments to survive the causes easily in the early stage itself. Nowadays many people' s medical reports show that cause over the pathology is in the brain. The research works deeply studied overruled about Dementia, based on the cognitive function like the absence of memory, loss of reasoning sense and affecting with the mental stress in their middle aging. Diagnosis of the diseases analyzed based on the MRI Scans. The study shows two points specifically, as such the reviews are:

- ✓ Alzheimer' s disease is affected at the older age.
- ✓ More than 5.2 million people from Americans are affected

This research reveals the report based on neuropsychological tests are BDIMC, COG, MOCA and MMSE etc. some drawbacks are traced towards the test following the futures if the language problem is faced. Data mining techniques are applied based on Association, Classification and General Visualization feature using Weka Tool. The predefined subjective pattern of evaluation implemented to find out the AD is affected or not. in the existing features, the detection of Alzheimer' s diseases are applied in an unpredicted pattern. While Using WEKA Tools, the cluster panel, the classify panel and the Visualize panel support to generate the resultant values easily Research named [3], presented by the author' s a team work. To conclude their work, which states to provide an emerging solution on the AD by applying MMSE tests results and implemented 10/66 battery is designed. Some drawbacks are faced over the features are it will be not sufficient to analyze the result if there is any verbal transmission issues occurred.

A Team of UK People enhances the study about Alzheimer' s disease in a detailed manner based on the approach of SAMS Framework. The key features planned to narrate the issue is towards the early detection of dementia on the approach of the methodology using the cognitive decline. As long as the talk over the memory loss happens become of the verbal communication as the left brain dumps the traced known features as a point of missense happens towards a very Big Silent. While skipping the simulation of study over the brain transmission about the communication drop age deals as left side Brain analysis in detail manner, whereas with words and languages similarly Right side brain tried to invoke it from the left side brain through a big picture depended with the user feeling and recognize the words and languages with visual effects as symbols and images.

III. Problem Statement Of The Research

After reviewing the study over the AD, many questions and doubts are stated to solve the issues in different ways by different research peoples. Even then, the issue is not getting an ideal solution to interrogate the human life as protectable with the remembrance at old age set. The scientific approach of the research methods, subject to detect the disease with the support of the caretaker with the Perceptive set of questions to recall the memory. A new classifier model with the predictor is required for the further research to prevent the neuron damage at the early onset. The problem statement traced towards the neuron damage, ethically it is identifying the exact point of the region through the detection scan and with the sample reports. The main deficiencies of the neuron for the mutation are happens based on the insufficient of the protein of the cell formation. As a course of action, if the trail based on the protein insufficient applied as the balanced feature, there may be a cause of Ad will be reduced as well as the recalling the memory will also get a good result. Once the point of immense of action detection over the brain Exon and intron region, pre-planning the before and after region will safeguard the nearby neuron in future.

IV. Cross Association Feature Analysis:

From the deep study over the attribute analysis the some of the parameters are cross linked over the attribute features to demonstrate status of the results found resting on the class value applied. In the case study of the associated link between them are :

- ✓ To check whether the patients is affected with Alzheimer' s Diseases or not by cross associated with the binding attributes gene, syndrome, and pathogenicity.
- ✓ If the patients narration shows about the Alzheimer' s Disease , then the genomic region has to predicted to analyze the exon' s mutation type based on the parameter linked towards are neuropathology with its counter filled terms defined towards the gene, with its biological effects
- ✓ All of them are counter to protect the older age people from the memory loss, if the patients affected with ad and tracing them towards the nerve system pathology change using the simulation of the neuron changes or with any damages as predicting.

The proposed system defines to simulate many parameterized issues to get some relevant solution for the AD disease. The research proposal plans to trace the features are:

- ✓ Trace the Ad disease in early stage as a quick onset pattern using the disease
- ✓ Uniquely identify the detection or damage over the gene
- ✓ Support to identify the nerve damage
- ✓ Provide solution as basically to improve the life style of the ad patients as much better.
- ✓ Two level of classifier are applied to predict the rule to mine the dataset
- ✓ Highest and lowest of all cross linked over parameter shall be suited fro good decision making
- ✓ Report traced shall be as much as deals with speed and accuracy on repeated penetrating.
- ✓ Overcome the language based issues on AD and focus on the nerve system as deeply.

V. Implementation Results

The results are overruled based on the data collection applied as a dataset, which exposed and result set. The parameter based survival are planned based on the gene are APP, MAPT, PSEN1, PSen2 and TREM2. Among the five gene multiple probability visualization are traced to detect the features and prevention sequence on Exon and intron area. From the graphical analysis traced, the highest record traced is PSEN1 and MAPT and the lowest features are APP, PSEN2, and TREM2. In the x-axis the index represents the features of gene as APP, MAPT, PSEN1, PSEN2, TREM2 and the y-axes represent the number of records traced. The next process starts with to trace the identical factors based on the disease affected from the dataset values. The applied factors based on the first level classifier model rules are predicted to find the Clinical phenotype process as the Alzheimer' s Disease are affected or not , and either with the others diseases . The status of the disease affected are sketched related to the gene are shown below.

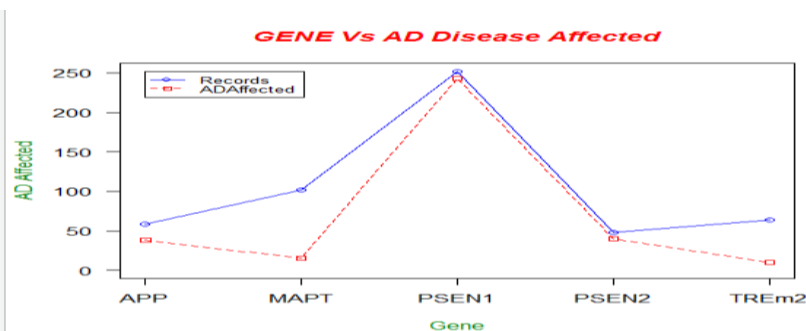


Figure 2: Gene vs AD Diseases affected

Number of attributes applied, in which all of them are relates to dependence between the multiple parameters are an inherited class features in among them. Whenever the research work states to predict the some values as a result as focused view, it requires some deep knowledge over them to analyze about the parameters. The research Work started with a deep study about the medical aspects related to Alzheimer' s disease , some features are defined with variant type of values , after an cross-over among the study, parameter values are defined and stated with specify data type features are numeric as required , to recognize the features easily. The research proposals planned towards the methodologies are to define the classifier model with an implemented prediction rule to define the level of accuracy. The estimate working hypothesis fully depends upon the content of the data fledged into the implementation for the estimated research proposal. Accuracy supports to provide an measurement value based on the known parameters as much as closest. In the same way, Precision is free flow values compared to accuracy, whereas the precision is measured depends up on two or more parameters as such, which are closest to one among them. The sensitivity represents to find and analyze the patients details based on the disease affected status with a positive environment with 76%, as such the specificity represents to find the probability of the diseases not affected to the patients with 50%. The resultant factor provides with high sensitivity with low specificity based on the AD Disease Affected as per the data gathering in the data collection process.

VI. CONCLUSION

After the deep knowledge gathers about the Alzheimer's Disease, some sort of thoughts appeared as an heart feels, to take care of the older age peoples. The study shows some blooms of big factors as an analyst, ie. Still now there is no curing process of the diseases is recorded. Many researchers started their survivals based on the cause and consequences only. The centroid point of vision has to be followed with the diet plan properly. From this gene based on the app, Psen1, Psen2, Mapt, and Trem2 can be traced and cleared at the early stage. Even though many records are trace based on the gene MAPT and PSEN1 compared with APP, the highest tracing factors are analyzed in the gene as APP and PSEN1. The very lowest features are TREM2, which related to the other's disease of the brain system. When the outwitting of the exon changes may happen because of the insufficient protein transplant or damages in the Nerve System.

REFERENCES

- [1]. Aaron A.Sorensen, " Alzheimer' s Disease Research: Scientific Productivity and Impact of the Top100 Investigators in the Field" ,Journal of Alzheimer' s Disease,ISSN:1387-2877/09
- [2]. Ajay Tdele, Vijay Gaikwad, Shubham Shakla,Harshal Patail, " Detection of Alzheimer' s Disease Using Machine Learning: A Review" , " International Journal of Advance Research in Computer Science and Management Studies" ,ISSN:2321-7782,e-ISSN:A4372-3114,Imapact Factor 7.327,Volume 6, Issue 4, April 2018, Available at: www.ijarcams.com.
- [3]. Bhagya shree SR, Dr.H.S.Sheshadri, Dr.SandhyJoshi, " A Review on the Method of Diagnosing Alzheimer' s Disease using Data Mining," International Journal of Engineering Research and Technology(IJERT),ISSN:2278-0181,Vol 3 Issue3, March 2014
- [4]. Caleb Kim and Alicia Boyd, Descriptive Research- Research Methods and Practices, April 27, 2 017.
- [5]. Christopher Bull, Dommy Asfiardy, Ann Gledson," Combining data mining and text Mining for detection of early stage Dementia: the SAMS framework" , LREC WorkShop:RaPID-2016-23rd of may 2016.
- [6]. Eman M. Ali,Ahmed F.Seddik, Mohamed H.HAggog," Automatic Detection and Classification of Alzheimer' s Disease from MRI using TANNN" ,International Journal of Computer Applications" ,(0975-8887) , Volume – 148-no.9,August 2016.
- [7]. Farshad Falahati, Eric WestMan, Andy Simmons, " Multivariate Data Analysis and Machine Learning in Alzheimer' s Disease with a Focus on Structural Magnetic Resonance Imaging" , " Journal of Alzheimer' s Disease" ,Doi:10.3233/JAD-131928
- [8]. Francis T.HAne, Brenda Y.Lee and Zoya Leonenko ," Recent Progress in Alzheimer' s Disease Research, Part 1:Pathology" ,Journal of Alzheimer' s Diseases" , ISSN:1387-2877/17,2007,Doi:10.3233/JAD-160882
- [9]. Igor O.Korolev," Alzheimer' s Disease: A Clinical and Basic Science Review" , Medical Student Research Journal" , 2014,Vol:04.
- [10]. Kelly Bethune, " Diagnosis and Treatment of Alzheimer' s Disease Current Challenges" , 2010.

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