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Parkinson's Disease Prediction using Machine Learning Methods and Large Amounts of Data

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Abstract: ***As the web becomes increasingly popular based on the quality of customer reviews, the field of sentiment analysis (also known as sentiment distribution, decision mining, sentiment mining, and thought mining) has received academic attention for many more years over the past few years. A critical analysis requires thinking about the content, sentences and context of the document and provides a recommendation and strength to the article. It is known that the opinions of buyers are expressed in loud Chinese sentences.***

However, due to the unconventional nature of typing in Chinese, machine learning methods cannot distinguish sentences that are highly recommended. We like to approach the problem with a semantic approach, mainly referring to the meaning of thinking about thinking, which is emotional. The results show that this combined theory test provides the greatest flexibility of the task.

Keywords: Parkinson's disease(PD), Machine Learning(ML), Speech disorders, KNN, Support Vector Machine(SVM).

I. INTRODUCTION

The website is not only a good way of promotion, but also a platform to exchange ideas and share events. During this network we only write reviews about products or services. Reactive psychotherapy helps to understand the functioning and transmission of systems as it is one of the most important for creating a connection between the two extremes. When analysing responses, various methods and methods such as learning widget, polarity dictionaries, natural language retention and psychological science scales are used to generate different types of sentiment analysis such as hypotheses, methodologies and justification datasets. Contributions, the research area is divided into three levels: word, order and writing, word order and writing are frequently used in current research. But language level, originality etc. many important and many evaluations are not taken into account. For Chinese, short answers consisting of one or two Chinese characters are the most ambiguous in meaning. The same learning process does not represent this difference.

Therefore, this study plans to conduct a new research hybrid theory using the fuzzy set concept, machine learning theory, and process assisted polarity dictionary. But, despite, etc. It takes into account opposite conjunctions such as, because of the uniqueness of Chinese, we like to expand the weight of sentences with synchronicity. It can also be used to give ideas, say, express, suggest, etc. Things will take time. If a sentence contains these sentences, he believes in only one religion. The 3 types of machine learning algorithms used for hypothesis testing are NB, ME (Maximum Entropy) and SVM (Support Vector Machine). We choose only NB and SVM for the accuracy of the experiment. Machine learning has many applications, but most importantly, machine learning data processing and data processing are like twins together, many insights can be gained from the use of learning algorithms. According to the study for the purpose of automation, data mining and analytical tools are tools used to switch the process from machine automation to data automation and information automation, and Data mining and data analysis extract useful data that is different. It is used in many countries with the help of mathematical models that ultimately focus on in depth understanding and apply specific teaching methods.

II. LITERATURE REVIEW

1) *"A hybrid intelligent system for the prediction of Parkinson's Disease progression using machine learning techniques" Mehrbakhsh Nilashi*, Othman Ibrahim, Hossein Ahmadi, Leila Shahmoradi*, Mohammad reza Farahmand Faculty of Computing, University Technology Malaysia, Johor, Malaysia [1].*

Parkinson's disease (PD) can be a mental disorder that affects motor control. The Unified Parkinson's Disease Rating Scale (UPDRS) is the baseline assessment for metal products. The UPDRS is the most widely used model to evaluate Parkinson's disease. Investigating the relationship between speech items and UPDRS scores is an important task in metal diagnosis.

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Supervised machine learning techniques are widely used to predict PD from datasets. However, most methods for tracking progress do not support data change. Additionally, the quality control system cannot be used to improve the condition for disease prediction, so they have to rewrite all training data to make model predictions.

In this article, we want to develop a new method for UPDRS estimation by taking advantage of the advanced machine learning techniques support vector machine.

We prefer to use progressive SVMs to estimate Total-UPDRS and Motor-UPDRS. We like to use the non-linear iteration part of least squares more to reduce the data space and to use the self map for joint processing. To evaluate the model, we conducted several experiments using metal materials and compared them with models developed in previous studies. The estimation accuracy of Total-UPDRS Pre-Degree Motor UPDRS by MAE evaluation method was obtained as MAE = 0.4656 and MAE = 0.4967, respectively.

The results of clinical studies unequivocally show that the estimation method is effective in estimating UPDRS. This concept has the potential to be intelligence for the prediction of metal in medicine.

2) "Comparative Survey of Machine Learning Techniques for Prediction of Parkinson's Disease" M. Saxena and S. Ahuja [2].

Prognostically related progression in Parkinson's disease can be a major challenge for physicians because diagnostic parameters are not consistent, making it difficult to choose the right path. Separately search and use different data from machine learning to investigate disease occurrence and development.

The current document is a new report on the maintenance of machine learning algorithms that has received intermittent interest over the past five years (2015 2019). Additionally, it recommends using hybrid intelligence models to improve prediction accuracy and freedom path precision. Finally, this article summarizes the necessity of developing holistic divination systems based on multiple parameters and extensive knowledge.

3) "Machine Learning based Diagnostic System for Early Detection of Parkinson's Disease" A. Saikia V. Majhi and M. Hussain [3].

Early detection is a way of care that allows for early diagnosis. The aim of this study is to gain a diagnostic understanding of biosignatures for brain and muscle weakness in patients with Parkinson's disease (PD). Since palladium is formed due to less monoamine neurotransmitter in the neural structure of the brain, resulting in muscle strength affecting hand movement, the first GUI model based on EEG and EMG is a good tool for early discovery of palladium and that's why.

EEG and EMG were recorded from early PD and healthy patients using biophysical recording equipment. Extract options for EEG and electricity and build neural networks. The design could be a new way to separate palladium from non-PDs and monitor disease. Many models exist, but the work presented here provides the interpretation of biological signals with other parameters such as tools for diagnosing diseases.

III. EXISTING SYSTEM

Brain networks have been developed to allow regional brain connectivity using resting state functional resonance imaging (R-fMRI) data. Deep connections such as car encoders are used where the network connection is established and affected to provide a thorough examination of the initial AD.

In a recent project, the proposed method called Periodic Classifiers is being abused by machine learning algorithms that tend to classify different points, a long analysis has been done in successive MRs and the main path is calculated for the changes in the disease over time. More accurate diagnostic purposes.

IV. PROPOSED SYSTEM

Fuzzy is a research model put forward for classification by separating material membership. It is generally used for all deployment and recovery.

The hyperplane is drawn with the help of margins. The main goal is to maximize the space between planes and edges. Margins are drawn with the help of support vectors such as products. The best part about blur is the difference between linear and nonlinear objects. Our proposal outlines the steps of a machine learning algorithm to predict the severity of Parkinson's disease.

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V. SYSTEM ARCHITECTURE

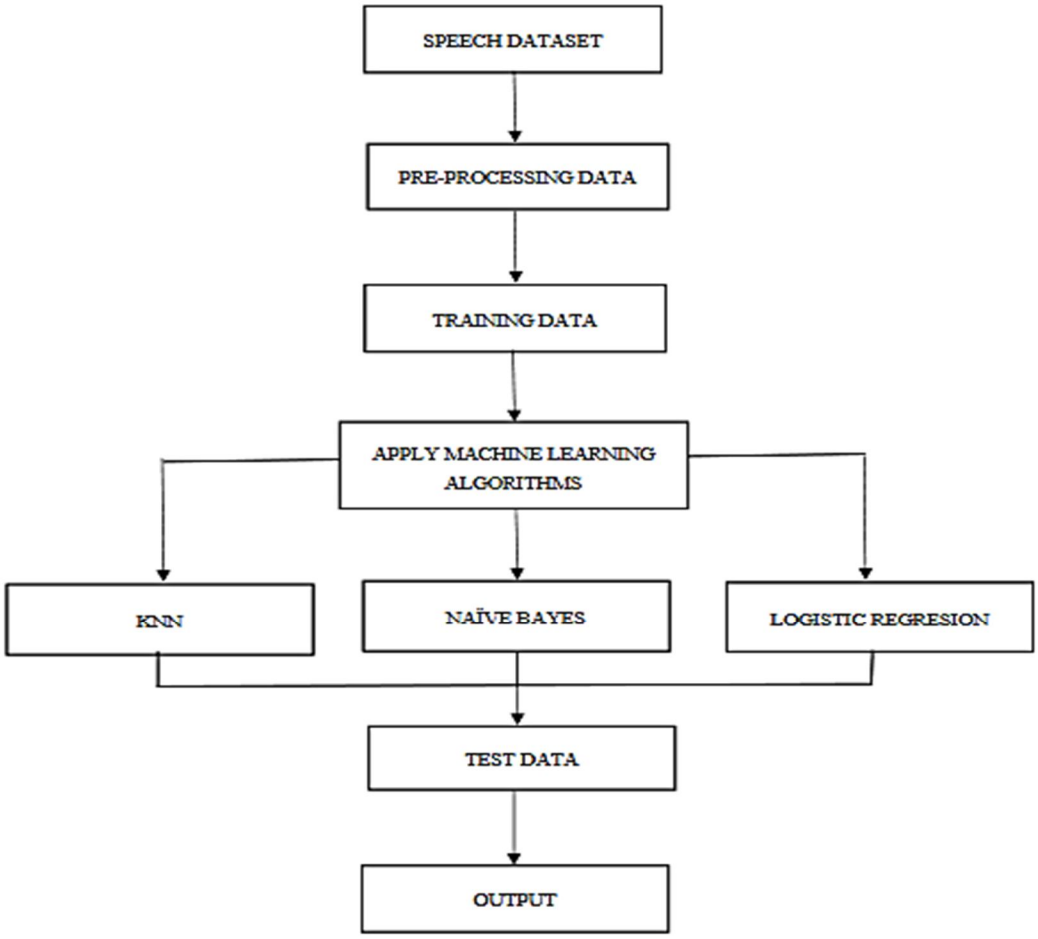
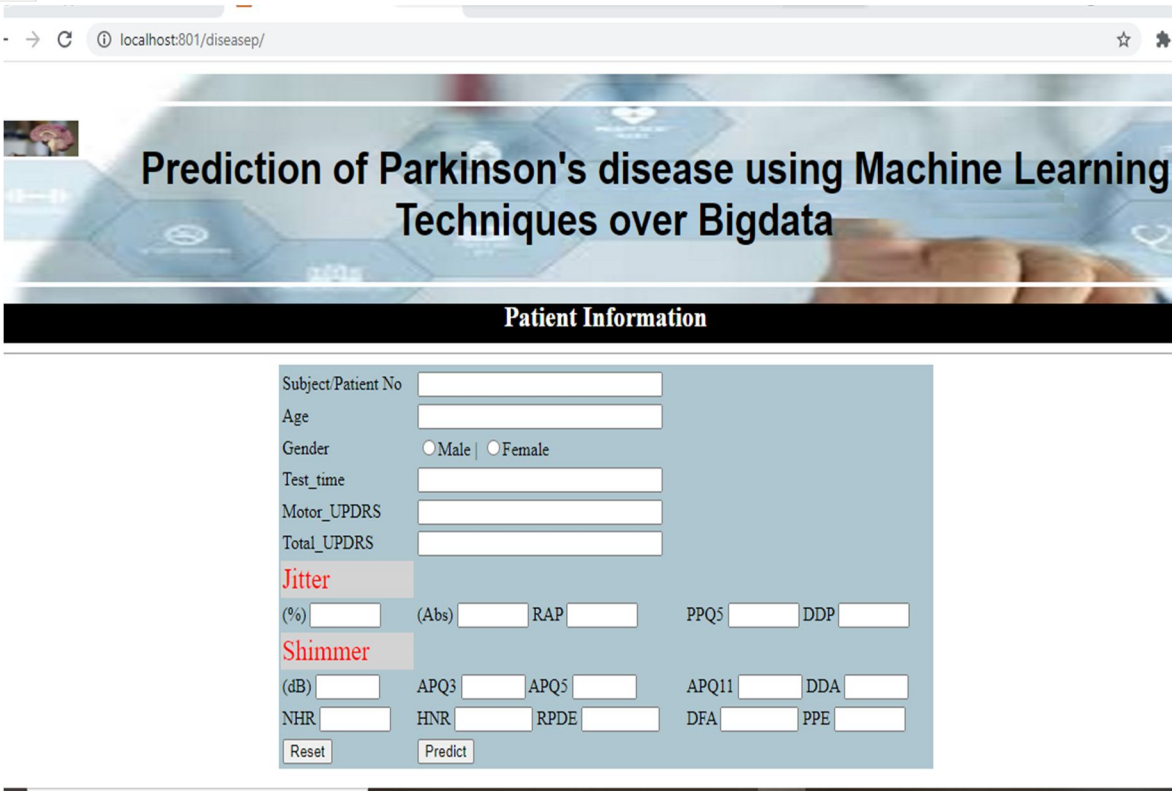
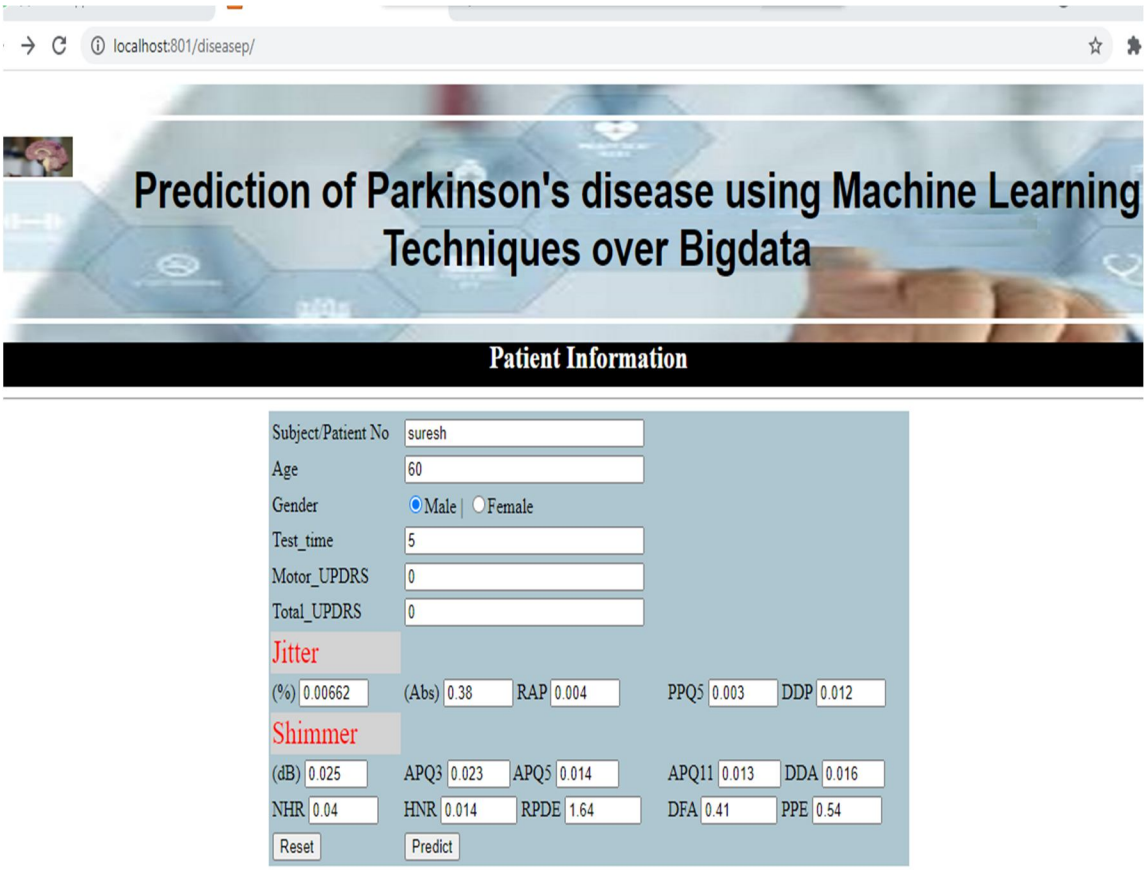


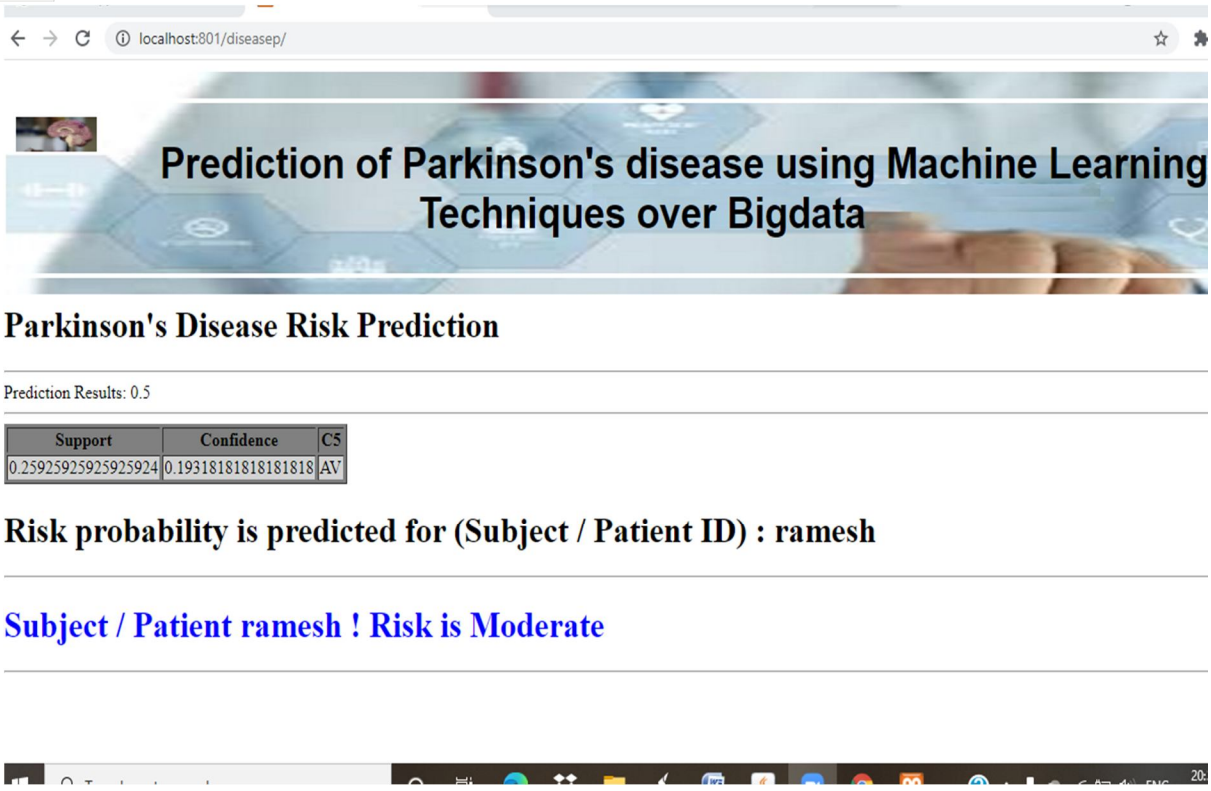
Fig: System Architecture

VI. RESULTS AND DISCUSSION




localhost:801/diseasep/
Prediction of Parkinson's disease using Machine Learning Techniques over Bigdata
Patient Information
Subject/Patient No
Age
Gender
Male | Female
Test_time
Motor_UPDRS
Total_UPDRS
Jitter
(%) (Abs) RAP PPQ5 DDP
Shimmer
(dB) APQ3 APQ5 APQ11 DDA
NHR HNR RPDE DFA PPE
Reset
Predict


localhost:801/diseasep/
Prediction of Parkinson's disease using Machine Learning Techniques over Bigdata
Patient Information
Subject/Patient No suresh
Age 60
Gender Male | Female
Test_time 5
Motor_UPDRS 0
Total_UPDRS 0
Jitter
(%) 0.00662 (Abs) 0.38 RAP 0.004 PPQ5 0.003 DDP 0.012
Shimmer
(dB) 0.025 APQ3 0.023 APQ5 0.014 APQ11 0.013 DDA 0.016
NHR 0.04 HNR 0.014 RPDE 1.64 DFA 0.41 PPE 0.54
Reset
Predict



VII. IMPLEMENTATION

A. Data Collection and Preprocessing:

The dataset used is the Parkinson's disease database, which is a combination of four different da asets but uses only the UCI Cleveland dataset. The data contains a total of 76 characters, but each test shows only one set of 14 choices. We used the UCI Cleveland dataset from the Kaggle website for analysis. A full description of the 14 traits used in career planning.

B. Feature Extraction

In this case, a set of substitute features from the original feature. Feature extraction involves transforming features. Principal Component Analysis (PCA) was used for feature extraction. The Test Manager will be a generic implementation of the modification algorithm.

C. Fuzzy C-means Clustering

Three-dimensional data can be grouped according to the principles of logical symbols, assigning a membership level of zero to 100% of each group. This can be very strong compared to traditional fixed-threshold packets because each signal is given a clear, ground-truth map.

D. Prediction Module

In this model, administrators have access to new symptoms. Calculate the weight of support for each symptom and calculate the confidence level for each disease based on actual symptoms and store it in the database. Then the fuzzy c-means rule will not reach disease-specific symptoms.

VIII. CONCLUSION

In this model, administrators have access to new symptoms. Calculate the weight of support for each symptom and calculate the confidence level for each disease based on actual symptoms and store it in the database. Then the fuzzy c-means rule will not reach disease-specific symptoms. The table estimates the incidence of the disease in affected individuals and provides further reports on mental health.

Machine Learning Strategies to Predict Parkinson's Disease Using Frame Learning Computations have been successfully applied and provide more accurate prediction results. This version predicts disease in the affected person and identifies brain resistance. Through the integration of whole brain MRI diagnosis and the psychology field, the fate of the disease is more predictable than Art, and the use of machinery provides more information. Once they can be collected, the disease itself can be predicted with greater accuracy at an early stage.

REFERENCES

[1] Mehrbakhsh Nilashi, Othman Ibrahim, Hossein Ahmadi, Leila Shahmoradi, Mohammadreza Farahmand, A hybrid intelligent system for the prediction of Parkinson's Disease progression using machine learning techniques, Biocybernetics and Biomedical Engineering,Volume 38, Issue 1,2018,Pg 1-15,ISSN 0208-5216,https://doi.org/10.1016/j.bbe.2017.09.002.

[2] M. Saxena and S. Ahuja, "Comparative Survey of Machine Learning Techniques for Prediction of Parkinson's Disease," 2020 Indo – Taiwan 2nd International Conference on Computing, Analytics and Networks (Indo-Taiwan ICAN), Rajpura, India, 2020, pp. 248-253, doi: 10.1109/Indo-TaiwanICAN48429.2020.9181368.

[3] A. Saikia, V. Majhi, M. Hussain, A. R. barua, S. Paul and J. K. Verma, "Machine Learning based Diagnostic System for Early Detection of Parkinson's Disease," 2020 International Conference on Computational Performance Evaluation (ComPE), Shillong, India, 2020, pp. 275-279, doi: 10.1109/ComPE49325.2020.9200195.

[4] K.R.Kruthika, Rajeswari, H.D.Maheshappa, "Multistage classifier-based approach for Alzheimer's Disease prediction and retrieval", Informatics in Medicine Unlocked,2019J. Tatemura, ``Virtual reviewers for collaborative exploration of movie reviews," in Proc. 5th Int. Conf. Intell. User Interfaces, 2000, pp. 272 275.

[5] RonghuiJu ,Chenhui Hu, Pan Zhou , and Quanzheng Li, "Early Diagnosis of Alzheimer's Disease Based on Resting-State Brain Networks and Deep Learning", IEEE/ACM transactions on computational biology and bioinformatics, vol. 16, no. 1,January/February2019.

[6] RuoxuanCuia, Manhua Liu "RNN-based longitudinal analysis for diagnosis of Alzheimer's disease", Informatics in Medicine Unlocked, 2019.

[7] Fan Zhang ,Zhenzhen Li , Boyan Zhang , Haishun Du , Binjie Wang , Xinhong Zhang, "Multi-modal deep learning model for auxiliary diagnosis of Alzheimer's disease", NeuroComputing,2019.

[8] ChenjieGe ,Qixun Qu , Irene Yu-Hua Gu , Asgeir Store Jakola "Multi-stream multi-scale deep convolutional networks for Alzheimer's disease detection using MR images", NeuroComputing,2019.

[9] Tesi, N., van der Lee, S.J., Hulsman, M., Jansen, I.E., Stringa, N., van Schoor, N. et al, "Centenarian controls increase variant effect sizes by an average twofold in an extreme case- extreme control analysis of Alzheimer's disease", Eur J Hum Genet.2019;27:244–253

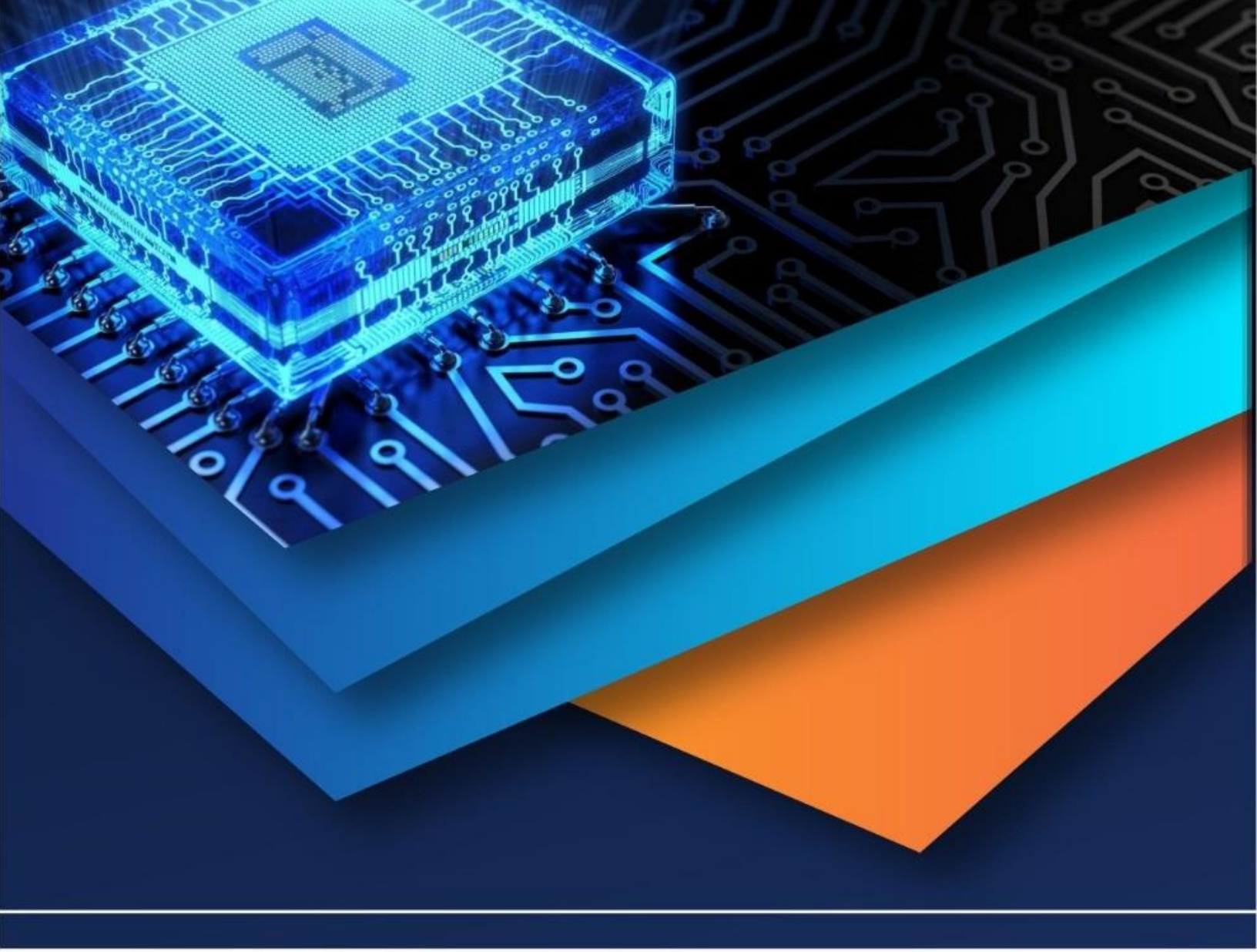
[10] J. Shi, X. Zheng, Y. Li, Q. Zhang, S. Ying, "Multimodal neuroimaging feature learning with multimodal stacked deep polynomial networks for diagnosis of Alzheimer's disease", IEEE J. Biomed. Health Inform., vol. 22, no. 1, pp. 173- 183, Jan.2018.

[11] M. Liu, J. Zhang, P.-T. Yap, D. Shen, "View- aligned hypergraph learning for Alzheimer's disease diagnosis with incomplete multi-modality data", Med. Image Anal., 2017 vol. 36, pp. 123- 134.

[12] Hansson O, Seibyl J, Stomrud E, Zetterberg H, TrojanowskiJQ,Bittner T, "CSF biomarkers of Alzheimer's disease concordwith amyloid-bPET and predict clinical progression: A study of fullyautomated immunoassays in BioFINDER and ADNI cohorts". Alzheimers Dement 2018;14:1470–81

[13] Van der Lee SJ, Teunissen CE, Pool R, Shipley MJ, TeumerA,Chouraki V, "Circulating metabolites and general cognitive abilityand dementia: Evidence from 11 cohortstudies",

[14] Kauppi Karolina, Dale Anders M, "Combining Polygenic Hazard Score With Volumetric MRI and Cognitive Measures Improves Prediction of Progression from Mild Cognitive Impairment to Alzheimer's Disease", Frontiers in Neuroscience, 2018.



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