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Speak To Classify Your Notes

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Abstract: ***Over the past few decades, note taking, which was used mostly in school and at university, has been used in everyday life after university as well. Writing can be time-consuming, especially in a fast lecture. Typing takes the least amount of time, so the page can have more information and be reviewed later. It consists of two phases speech to text conversion and classification both plays an important role. Speech-to-text conversion facilitates the integration of people with hearing impairments into oral communication settings. However, the transformation of speech into written language in real time requires specific techniques as it must be very fast and almost 80% correct to be understood. In machine learning, classification is the process of assigning a set of predefined categories to open-ended text. Text classifiers are capable of organizing, structuring, and categorizing pretty much any kind of text.***

Keywords: Speech To Text, Text Classifiers, Classification, Digital Note-Taking, Machine Learning Technique

I. INTRODUCTION

The operation of Artificial Intelligence is Machine Learning. Learning by experience is a way to educate the computer to do what it naturally does in humans. A person can use speech recognition to convert speech to textbook in real- time if they repeat what was firstly spoken. The reason forre-speaking is substantially to include punctuation and speaker identification, but also to accommodate the language proficiency of the followership. Other than ferocious and endless training of the speech recognition machine, no special training is needed. A sound- shielded terrain is profitable. A speech recognition system doesn't bear any special training. Still, verbal knowledge is necessary for the chunking of the words and acclimations of the wording. The textbook bracket process involves dividing input documents into two or further classes where each document can be distributed into one or further orders. In bracket systems, group of words or terms are collected together and organized. Cosine similarity measures the similarity between two vectors of an inner product space. A document can be represented by thousands of attributes, each recording the frequence of a particular word (similar as a keyword) or expression in the document. Therefore, each document is an object represented by what's called a term- frequence vector.

II. LITERATURE SURVEY

A review On Speech to Text Conversion methods by Miss. Prachi Khilari and Prof. Bhope V. P we will conclude that after speaking through the microphone the application will convert the speech to text and will save that text in a file[1].

Intralingual speech to text conversion in real time Challenges and Opportunities by Susanne Wagner we can conclude that the speech is recognized by the application using speech recognition technique.Journal of Speech to Text Conversion by Dhanush Kumar S, Lavanya S, Madhumita G,Mercy Rajaselvi V the system first recognizes the person in front of it then ensures the integrity and prevents identity theft and it verifies the date and the subject of the examination by voicing out the same[2] [3].

Towards speech to text translation without speech recognition by Sameer Bansal, Herman Kamper, Adam Lopez, Sharon Goldwater UTD , MT Model and ZRToolKit is explained in Detail[4].

Text Classification through Statistical and Machine Learning Methods: A Survey by Krina Vasa [5], Text Classification Techniques: A Literature Review by M. Thangaraj and M. Sivakami [6] and Text Classification Using Machine Learning Techniques by M. Ikonomakis S. Kotsiantis V. Tampakas [7] we had conclude that the classification of the text files will be done by the classification techniques used and explained in this paper.

III.PROBLEM DEFINITION

It's designed grounded on the fact that people prefer digital note-taking. Currently, still, the use of computers is replacing the traditional pencil-and- paper methodology. It's an early attempt to connect between the relations of physical documents in the digital world. Our proposed system will successfully identify words spoken audibly and convert them into readable textbook using automatic speech recognition and save them. Automatic speech recognition (ASR) technologies moment can rightly fete and write down further than 90 percent of a long series of spoken words.

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Our system will also classify unshaped textbook into lines. Automated textbook bracket has been considered as a vital system to manage and reuse a vast quantum of documents in digital forms that are wide and continuously adding. The part of automated textbook bracket is to classify documents into destined orders, generally applying machine literacy algorithms. With the instant growth of information, textbook bracket has come a vital fashion for handling and organizing textbook data.

IV. PROPOSED SYSTEM

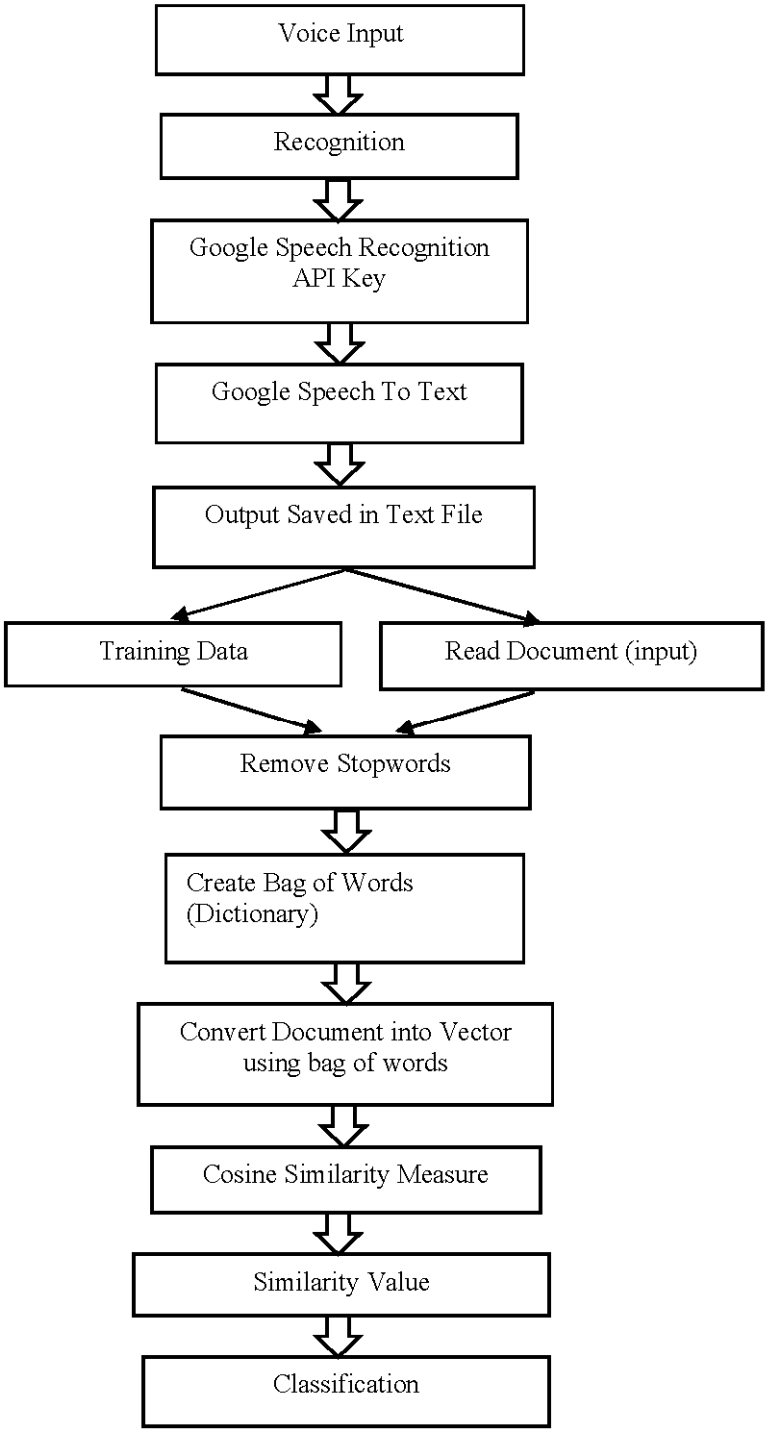

Figure 1. Proposed System

With reference to figure 1

1) First, speech recognition that allows the machine to catch the words, expressions and rulings we speak.Second, natural language processing to allow machines to understand what we are saying . Third, speech conflation to allow the machine to speak. This chapter focuses on speech recognition, the process of understanding the words that are spoken by mortal beings. PyAudio is used to capture the speech signals. It's demanded for levee microphone input and also it has to be understood by the system.
2) The Speech Recognition library acts as a wrapper for several popular speech APIs and is therefore extremely flexible. One of these — the Google Web Speech API — supports a dereliction API key that's hard- enciphered into the Speech Recognition library. That means you can get off your bases without having to subscribe up for a service.
3) Speech to text translation is done with the help of Google Speech Recognition. A working internet connection is required. Still, there are certain offline Recognition systems similar as Pocket Sphinx, but have a truly rigorous installation process that requires several dependences. There are few speech recognition programs that are as easy to use as Google Speech Recognition. There are few speech recognition programs that are as easy to use as Google Speech Recognition. Also the textbook is saved in the form of a textbook train.
4) Remove stopwords Removing stopwords is one of the important step in textbook classification .It is used to remove gratuitous words from our documents in order to give further concentrate to the important information. It's used to prize unique words form documents.
5) Tokenize Tokenization is the process of tokenizing or divorcing a string, textbook into a list of commemoratives.
6) Convert documents to vector In order to perform cosine vector similarty on document, we need to transfigure our documents into vector representations similar that we can apply numeric machine knowledge operations. It convert the judgment into wordbook with words count for each word. For word counting we've used counter from collections modules to make the wordbook of word count.
7) Cosine similarity measure Cosine similarity measures the similarity between two vectors of an inner product. It's constantly used to measure document similarity irrespective of their size inNaturallanguageProcessing.However, it means two vectors have the same exposure, If the Cosine similarity score is 1. The value near to 0 indicates that the two documents have lower similarity.

Formula :

$$similarity(A,B) = \frac{A \cdot B}{\|A\| \times \|B\|} = \frac{\sum_{i=1}^{n} A_i \times B_i}{\sqrt{\sum_{i=1}^{n} A_i^2} \times \sqrt{\sum_{i=1}^{n} B_i^2}}$$

By using these formula we have calculated similarity value for each subject.

8) Bracket Bracket of documents is done base rested on the similarity value which we've calculated using cosine similarity.

V. RESULTS

Figure 1. Home Screen

With reference to Figure 1. Home Screen has 4 buttons : Microphone ,View,List of Subjects ,Classify the subject

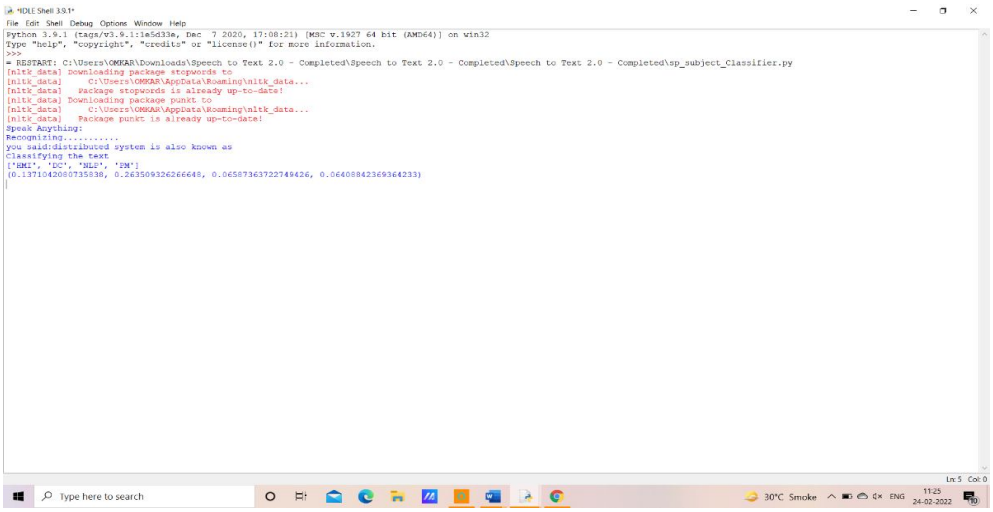

Figure 2. Speech Recognition

With reference to Figure 2. The spoken data is recorded using microphone and then displayed on shell

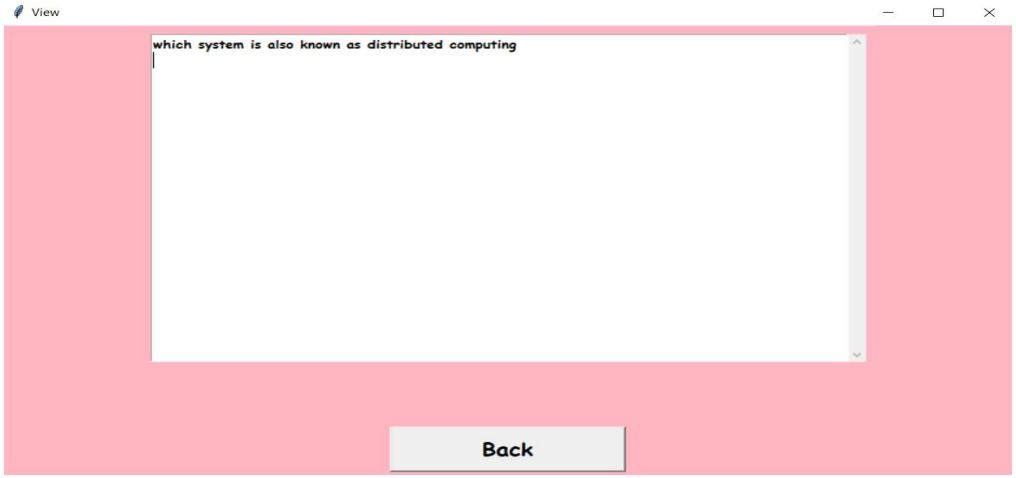

Figure 3. View

With reference to Figure 3.This view screen shows the recently spoken data.

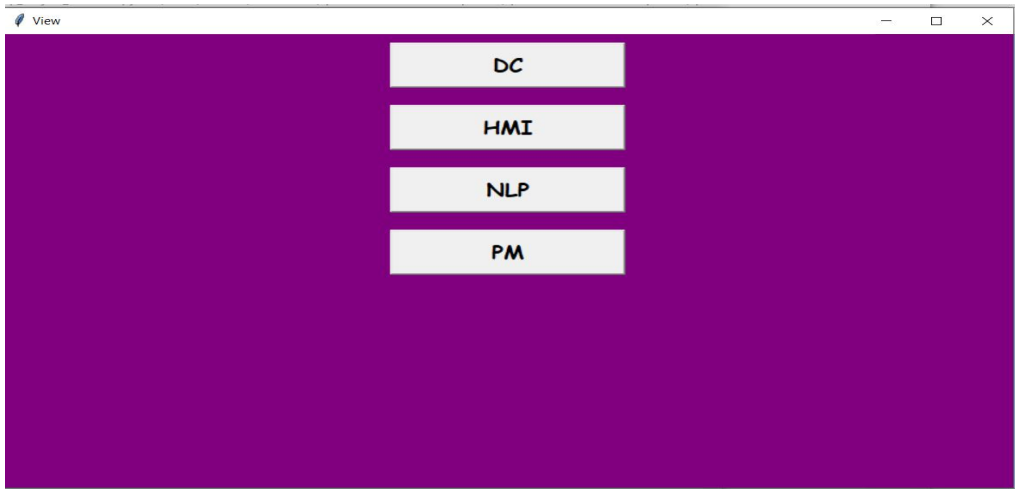

Figure 4. Subject List

With reference to Figure 4.The list of subjects shows the subjects according to which data is classified.

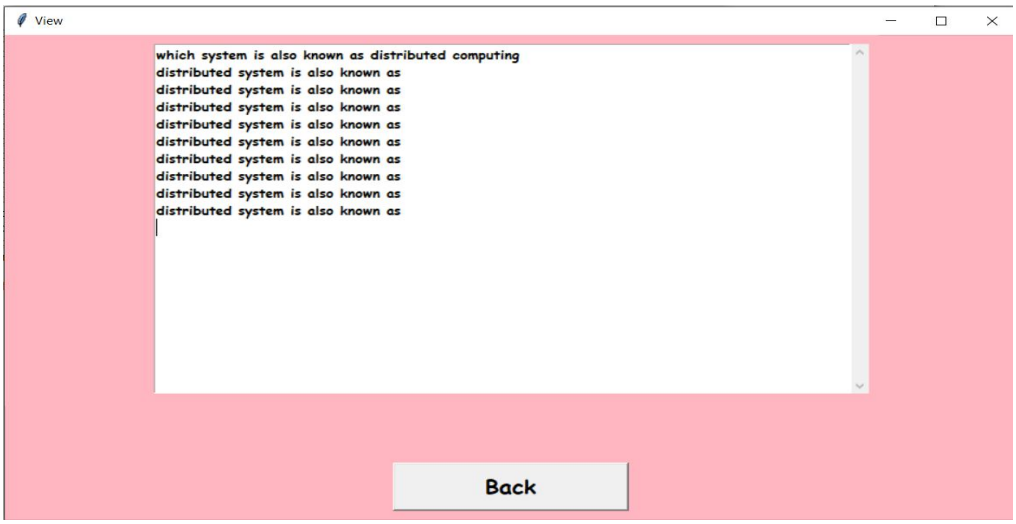

Figure 5.
With reference to Figure 5. DC displays the classified data.

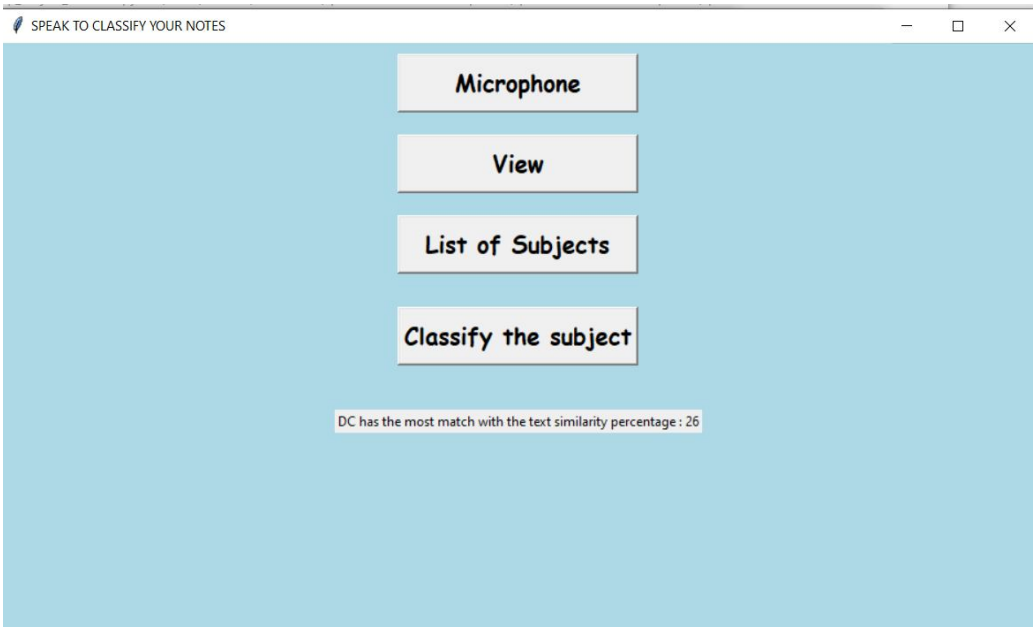

Figure 6.
With reference to Figure 6. The maximum similarity percentage is calculated and max matched subject is displayed.

VI. CONCLUSION

Proposed system will make use of various deep learning and machine learning algorithms. In existing system Speaker has to train the speech recognition system in advance with her voice and speaking characteristics .It also requires SD card to store text file .The aim of our project is to implement the speech recognition system without SD card and by using Google speech recognition API. The system will give the input data from mic in the form of voice, Once the voice is recognized properly then it will pre-processed that data & convert into text format displayed on screen. We will try to classify unstructured data into two or more classes.

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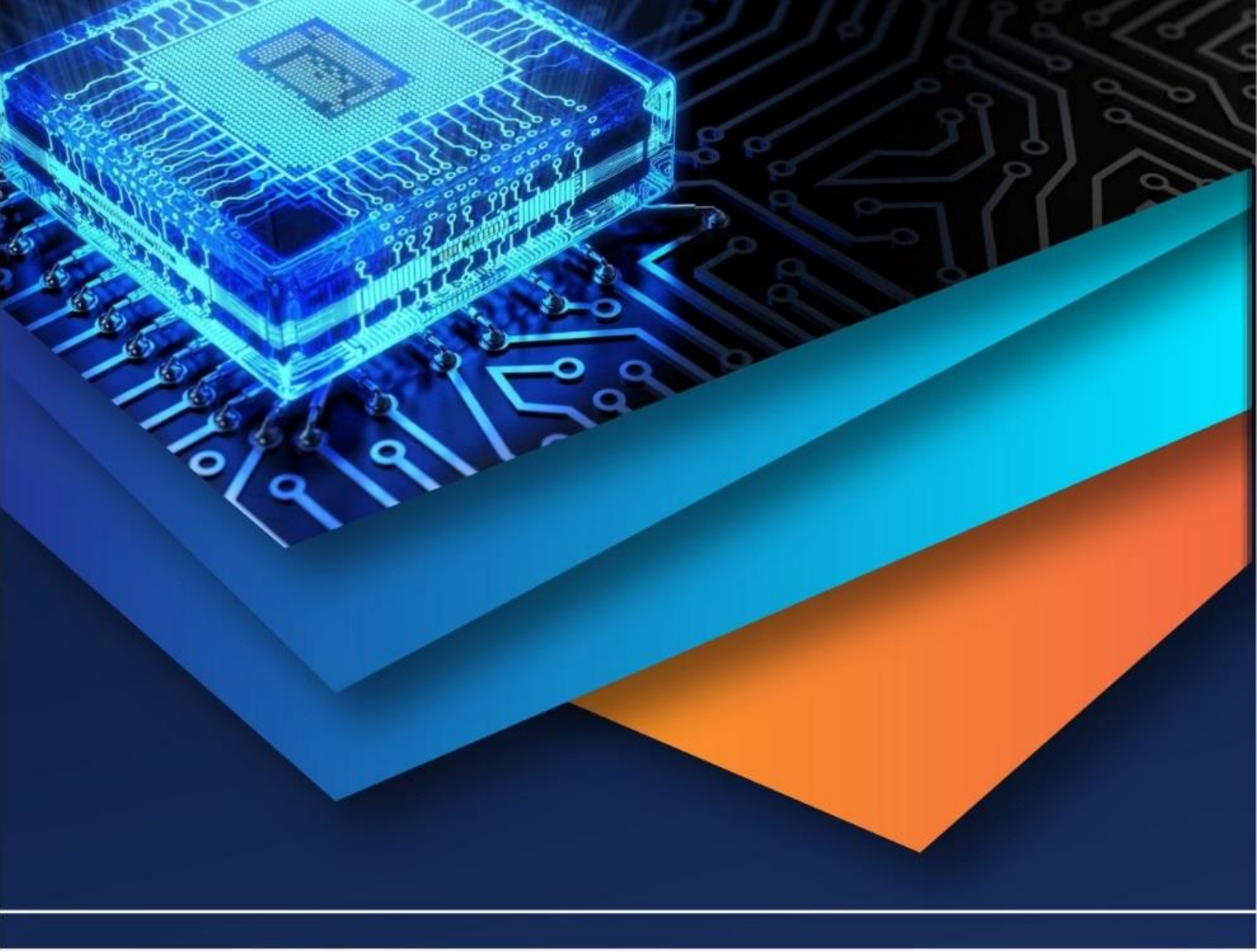

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