Text Summarization and Conversion of Speech to Text

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Abstract - *This article describes of Recurrent neural networks, and deep learning algorithm fusion for Text Summarization System and analyzing the text learning process. After that, text analysis learning models are summarized. In addition, applications of deep learning-based text analysis are introduced. Speech is the most important part of communication between human beings. Though there are different means to express our thoughts and feeling, speech is considered as the main medium for communication. Speech recognition is the process of making a machine recognize the speech of different people based on certain words or phrases. End-to-end deep learning methods can be used to identify and simplify the spatial representation of text data and semantic information. This study examines deep learning-based text analysis*

Key Words: **(Summarization, Speech, Text, Speech to Text, Audio, Words)**

1. INTRODUCTION

Text Summarization helps us to give a summary report of the given Paraphrase. Variations in the pronunciation are quite evident in each individual's speech. Even though speech is the easiest way of communication, there exist some problems with speech recognition like the fluency, pronunciation, broken words, stuttering issues etc. All these have to be addressed while processing a speech. Lengthy documents are difficult to read and understand as it consumes lot of time. Text summarisation solves this problem by providing a shortened summary of it with semantics.

1.1 Segmentation

The task of splitting text into meaningful segments is called text segmentation. Words, sentences, or topics can make up these segments. Topic segmentation, a type of Text Segmentation task that breaks up a lengthy text into sections that correspond to distinct topics or subtopics, is the subject of some of our examination.

Take, for instance, an automated transcription of an hour-long podcast. It can be easy to lose track of which sentence you are reading because the transcription can be long. By dividing the text into multiple segments, Automatic Topic

Segmentation solves this issue and makes the transcription easier to read.

1.2 Normalization

A crucial component of the field of data management is data cleaning. A database's whole contents are reviewed as part of the data cleansing process, and any information that is missing, inaccurate, duplicated, or irrelevant is either updated or removed. Data cleansing involves finding a technique to optimise the dataset's accuracy without necessarily messing with the existing data. It does not just involve removing the old information to make room for new data. The process of identifying and fixing incorrect data is known as data cleaning. The majority of tasks performed by organisations rely on data, but few do so in a way that is effective. The most crucial phase in the data process is cleaning, categorization, and standardisation of the data.

1.3 Feature Extraction

Reducing the amount of resources needed to describe a huge quantity of data is the goal of feature extraction. One of the main issues with analyzing complex data is the sheer amount of variables that are involved. Results can be improved utilizing constructed sets of application-dependent features, often built by an expert. Analysis with a large number of variables normally demands a substantial amount of memory and computer capacity. The technique of feature engineering is one of these.

1.4 Modelling

Modeling entails teaching an algorithm for machine learning to predict labels from features, tweaking it for the needs of the business, and validating it. A computer model learns to carry out classification tasks directly from text or voice using deep learning. Natural language processing (NLP) uses the text summarizing technique to provide a succinct and accurate summary of a reference document. It is exceedingly challenging to manually summarize a lengthy article. Machine learning-based text summarization is still an extensive research area.

The statistical method of modelling is used to identify hidden themes or keywords in a group of papers. A probabilistic approach for learning, analyzing, and finding topics from the

document collection is topic modelling. In order to verify whether the extracted sentence accurately captures the idea of the input document, LDA is most frequently utilized in extractive multi-document summarization. In this article, we'll look into text summarization approaches to cut down on redundancy and enhance final summary coverage.

2. Objectives

Automatic text summary aims to deliver the original material in a concise form with semantics. The main benefit of adopting a summary is that it shortens the reading process. There are two types of text summarizing techniques: extractive and abstractive. Selecting significant sentences, paragraphs, etc. from the original content and concatenating them into a shorter version constitutes an extractive summary method. Understanding the key ideas in a document and then expressing those ideas in understandable everyday language constitutes an abstractive summary.

3. Scope of Study

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency.

Fig -1: Activity Diagram

Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors. A Use case diagram outlines how external entities i.e. user interact with an internal software system. A behavioral UML diagram type called a use case diagram is widely employed to evaluate different systems. They give you the ability to see the various kinds of roles in a system and their interactions with it.
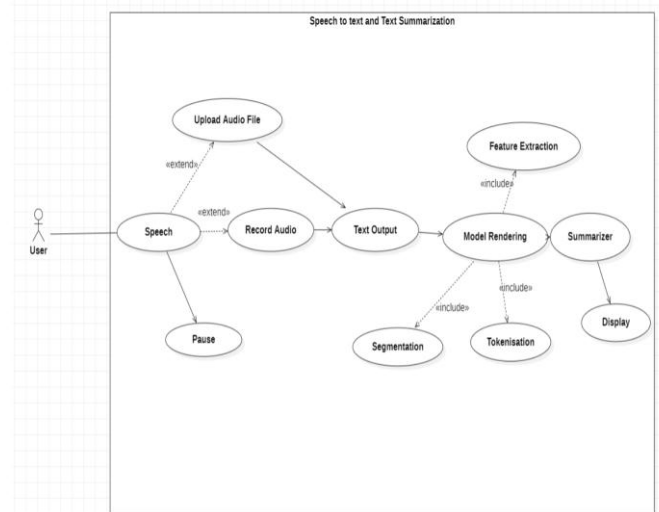

Fig -1: Use Case Diagram

A state diagram consists of states, transitions, events, and activities. It describes the different states that an object moves through or provide an abstract description of the behavior of a system.
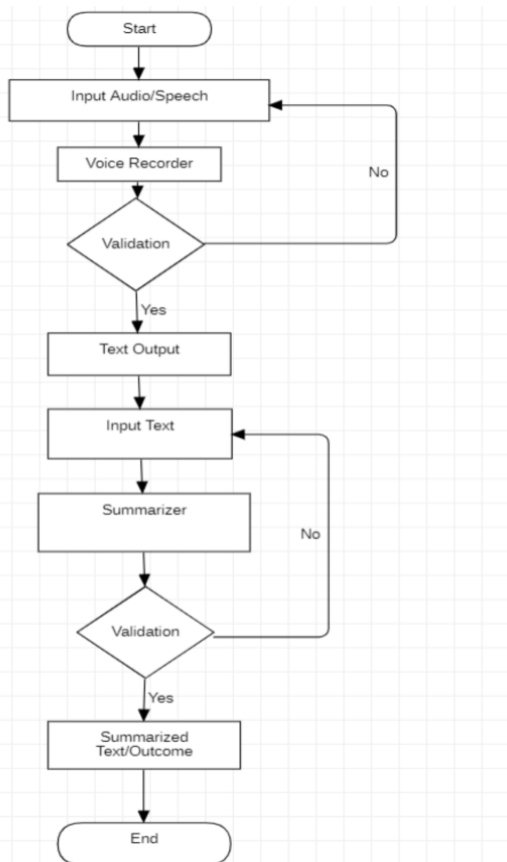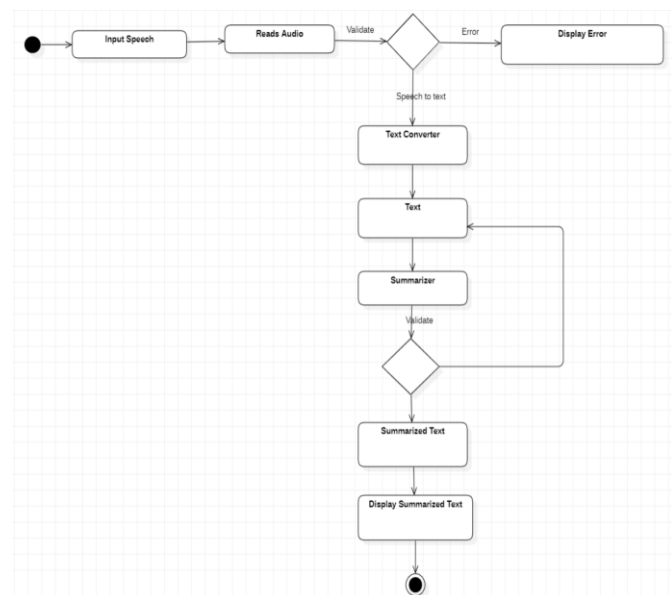

Fig -1: State Diagram

4. CONCLUSION

In this research paper, we have successfully studied about Text To Speech Conversion and to create a summary of that text. This model can be used in implementation for extensive business meetings where one can get the summarized information on a particular meet.

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