

Speech-Driven Web News Application using Artificial Intelligence

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Abstract: *The proposed idea of the Speech-driven Web Application provides a simplistic approach and ease to the user. The system provides a very user-friendly, easy to use, dynamic, and informative user experience. A voice-controlled system embedded in a web application can enhance user experience and can provide voice as a means to control the functionality of e-commerce websites. The system also offers the ability to search news on the basis of preferred location, source, theme, and interest. The system will reduce the amount of human effort required by the user to perform previously and will offer a more exciting way of getting informed. In this paper, a very fascinating proposition is presented, a new web-based service that is a fusion of the revolutionary new Alan Studio, News API and React. The system enables the user to have the ability to not only stay informed and updated but that too by using one of the most sought-after technologies in the world right now. The service provides all the components required for a user to be able to use voice and speech as a medium to find and look for news about his/her choice and the option to go through the news in a very concise or in very detailed manner.*

Keywords: News API, Web application, React, Dynamic

I. INTRODUCTION

Voice Recognition and Voice Control have been a prominent field in research since the 1930's. With the advancement of technologies such as AI and ML. Voice command operations shows some good progress in today's world. The SPEECH-DRIVEN WEB NEWS APPLICATION USING ARTIFICIAL INTELLIGENCE stands as the result of the research that had been undergone for years. A conversational voice-controlled news application is one that gives the most up-to-date mainstream media headlines. This software is unique in that it receives news on specific topics and categories based on the user's preferences. The proposed Voice Controlled Web Application concept offers a user-friendly approach and convenience of usage. The service includes all of the components necessary for a user to use voice and speech to identify and search for news regarding his or her choice, as well as the ability to read the news in a brief or extensive manner. A voice-controlled technology embedded in a web application can improve the user experience and allow voice control of e-commerce websites capabilities.

II. EXISTING SYSTEM

In 1990s the crucial technologies developed during this period were the styles for stochastic language understanding, statistical literacy of aural and language models, and the styles for perpetration of large vocabulary speech understanding systems. After five decades of exploration, the speech recognition technology has eventually entered the business, serving the druggies in a variety of ways. Designing a machine that actually functions like an intelligent human remains a huge hurdle in the future.

III. PROPOSED SOLUTION

The proposed system includes all of the components necessary for a user to utilise voice and speech as a medium to search and look for news concerning his or her choice, as well as the ability to read the news in a brief or extensive manner. A voice-controlled technology embedded in a web application can improve the user experience and allow voice control of e-commerce websites capabilities. The system also allows users to search for news based on their favourite



area, source, theme, or interest. The system offers a user-friendly, simple-to-use, dynamic, and instructive experience. The system enables the user to not only keep informed and updated, but also to do so while utilising one of the most in-demand technologies in the world today. The solution will reduce the amount of human effort previously required of the user and will provide a more engaging way of receiving information.

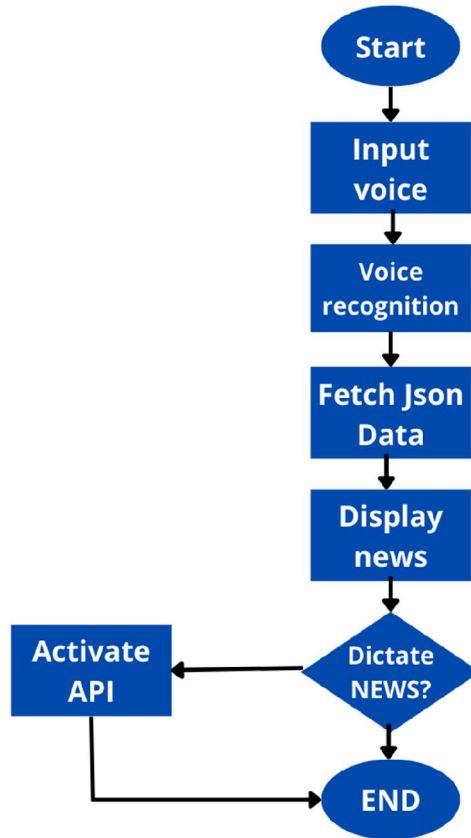
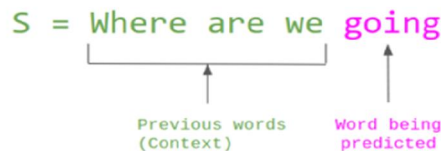


Figure 1: Data Flow Diagram

IV. MODULE DESCRIPTION

4.1 Speech-to-Text

Language modelling is a technique for distinguishing between similar-sounding words and sentences. The use of various statistical and probabilistic techniques to predict the probability of a given sequence of words appearing in a phrase is known as language modelling (LM). To establish a foundation for their word predictions, language models analyse large amounts of text data. They're used in apps that use natural language processing (NLP), particularly those that generate text. Machine translation and question answering are two of these applications.



$$P(S) = P(\text{Where}) \times P(\text{are} | \text{Where}) \times P(\text{we} | \text{Where are}) \times P(\text{going} | \text{Where are we})$$



4.2 Keyword Matching

Once the words are decoded and processed these words are used as Keywords to find the latest happenings based on the input keywords. We term it here as Keyword Matching. The processed vocal command is given as the input to the system to retrieve the data from the internet.

4.3 Text-to-Speech

The information retrieved as a result of the voice command can be read as an article and can also be given a brief by the system. This is done by converting the Text to Speech. Here we take up the help of an automated computer voice that reads out the requested information. This process is the exact reverse process of the first process.

4.4 Display News

The information is also displayed in addition to audio output, in the same window as a result of the vocal command processing. The news are displayed in a tiled format which makes it easier to the user to get a glimpse of the news by reading the headlines on the tile.

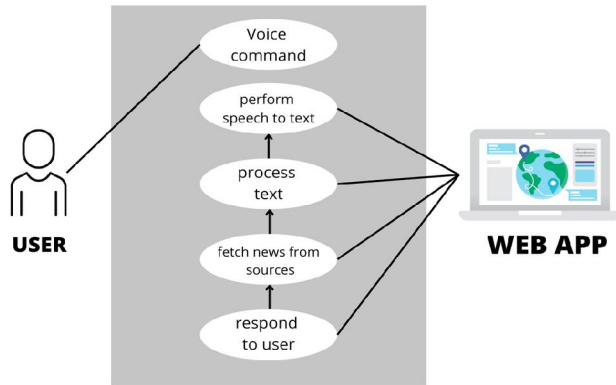


Figure 2: Use Case Diagram

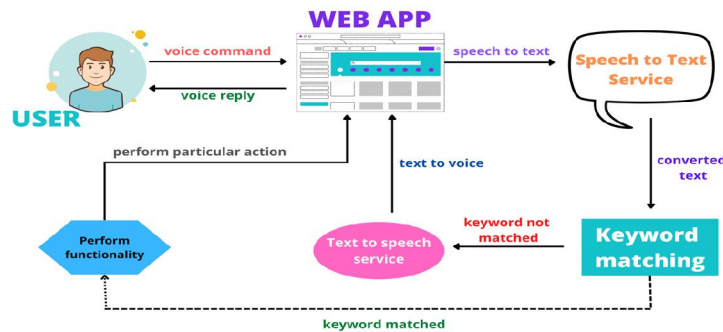


Figure 3: Architecture Diagram

V. CONCLUSION

In the last 5 to 10 years, speech recognition technology has advanced dramatically. Various application systems based on the progress have been developed employing dictation and spoken dialogue technologies. Information extraction and retrieval is one of the most significant applications. Broadcast news can be automatically indexed using speech recognition technology, resulting in a wide range of options for interactively viewing news archives. Automatic speech recognition will continue to find uses, such as meeting/conference summary, automatic closed captioning, and interpreting telephone, because speech is the most natural and efficient way of communication between humans.

Speech recognition is predicted to become the primary input device for the "wearable" computers that are currently being researched. We must tackle a number of issues in order to make these applications a reality. The most prominent question

is determining how to make speech recognition systems resistant to acoustic and linguistic diversity in speech. In this scenario, a paradigm changes from speech recognition to understanding, in which the speaker's underlying messages, that is, the meaning/context that the speaker wanted to convey, are extracted rather than all of the spoken words, will be critical.

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