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Voice-Assisted News App using Natural Language Processing

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Abstract

In recent times, the advancements in Artificial Intelligence (AI) and natural language processing (NLP) have enabled the development of novel voice-assisted apps. This study introduces a cutting-edge Voice-Assisted News App that utilizes the capabilities of Alan M, a prominent AI platform that revolutionizes the way people access news. This research endeavor attempts to utilize Alan Al's capabilities to offer a personalized news experience and enhance clarity through voice interactions. Users of the Voice-Assisted News software can effortlessly request and select their preferred news topics, and the computer will generate the most relevant news updates. Through integration with diverse news sources and the application of sophisticated algorithms, the program generates an individualized news stream for every user, ensuring they receive the latest and most relevant information. Users can efficiently access story audio descriptions. The app's speech interface allows users to navigate across different news categories. The NLP algorithms developed by Alan AI offer precise understanding of user demands by ensuring smooth interaction and an authentic conversational experience.

Keywords

Voice assisted news app, Artificial intelligence, Natural language processing.

Introduction

Artificial intelligence (AI) and natural language processing (NLP) have recently made it possible for unique voice-assisted apps to be developed. By utilising the capabilities of Alan M, a pioneering artificial intelligence platform that reimagines the way in which consumers take in news, this research presents a Voice-Assisted News App that is at the cutting edge of technology. The purpose of this study effort is to provide clarity and a personalised experience with regard to news through voice interactions. This will be accomplished by utilising the capabilities of Alan Al. The software that is used for Voice-Assisted News allows users to just enquire and select the news that they are interested in hearing about, and the program will then provide the most relevant news updates automatically. Through the utilisation of clever algorithms and the establishment of connections with a variety of news sources, the program generates a personalised news feed for each individual user, thereby ensuring that they are provided with the most recent and relevant information. Users are able to expeditiously listen to audio descriptions of the stories. The app's speech interface allows users to navigate through the many news categories. In order to provide

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users with a correct interpretation of their requests, modern natural language processing algorithms developed by Alan AI offer a conversational experience that is both seamless and authentic.

Researchers investigate the concept of virtual assistants and the ways in which they could be utilized to create an intelligent Virtual Personal Assistant (VPA) that is centred on data generated from users. This article discusses the various types of virtual assistant systems, as well as the structural components that make up these systems, as well as their applications in a wide range of sectors, including aiding with individuals who are visually impaired [Jain, S. R., & Jason, F., 2023].

The significance of voice assistants powered by artificial intelligence in modern life is emphasized by others. The paper underlines their ability to recognize natural language, together with their integration with Internet of Things (IoT) systems and smart devices, as well as their potential to enhance interactions between humans and machines [Shende, D et al., 2019]. Additionally, the process of developing a local voice assistant that is more flexible and accessible without relying on cloud services is elucidated. These findings shed light on the significance of voice assistants that are driven by artificial intelligence in terms of their ability to provide speech recognition and synthesis, to aid users who are blind, and to improve user experiences in general. [Tulsan, A. et al., 2019] research has shown that virtual colleagues have revolutionized innovation in the 21st century by enabling human-like intuitiveness with technological devices. The use of well-known virtual assistants (VAs) such as Siri, Google Right Hand, Cortana, and Alexa has gained traction all around the world. Despite this, there are still problems with voice recognition, interpretation of important information, and engagement without the use of hands devices.

According to the findings of a survey that included one hundred customers, even though a great number of services are adequately covered, there is still a need for significant improvements. It is essential to pay attention to these regions to broaden the selection of virtual colleagues and ensure that they are adequate. Patients diagnosed with multiple myeloma (MM) have a high data requirement because of the intricacy of the disease and the wide variety of medications available to treat it. According to Marc-Andrea Baertsch et al. (2022), advanced voice collaborators assist in the maintenance of a healthy lifestyle and have the potential to be a useful tool that even more experienced patients can use to obtain information regarding their health. [MM. Leon Reicherts et al., 2022] suggests that voice colleagues may consequently prove to be useful in the provision of advanced health administrations to fulfil the data requirements of patients. The use of voice assistants has become increasingly common in households, and they are currently being developed for use in professional settings. Examples of such assistants include Alexa for Business and IBM Watson for Business, which aid with activities such as organizing meetings.

Our research examines how these assistants might be improved to empower users in the workplace by acting as facilitators throughout job execution. We investigated the impact of the interaction modality (voice versus screen) on user behavior. Our hypothesis posited that voice interactions will exhibit greater directness and emotional expression, leading to more seamless talks. The study conducted by Ka-Chun Li et al. in 2016 presents the development of an online news reader application specifically designed for those with visual impairments. The purpose of this program is to minimize the level of demanding education needed, similar to Braille. To enhance the ease of navigating around the news, it employs Kinect-based body motion control.

Speech recognition and text-to-speech capabilities are incorporated into the application, which also organizes news information for quick access as a random selection. User trials suggest that users are quite satisfied with the performance of the application as well as the usability of the gesture control user interface. According to Pranav Kulkarni et al.

(2022), speech and language therapy is used to treat people and children who have issues communicating, eating, drinking, and swallowing. As a result of the fact that the demand for certified practitioners is higher than the supply, the focus is being directed towards people who have more advanced requirements. Voice-assisted technology (VAT) has shown some promise in terms of supporting individuals who have speech difficulties; nevertheless, there is still a lack of empirical study on its professional use that has been conducted.

Methodology

To determine the objectives of the voice-assisted news app, it is crucial to explicitly define the app's aims and identify the key features, capabilities, and user experience components it should provide. Firstly, it is advisable to compile an extensive dataset of news articles sourced from diverse outlets, including both national and local publications, and categorize them accordingly. This will guarantee that the news information is precise and current. Verify the dataset's currency and ensure it accurately reflects the characteristics of the population. In the subsequent phase, it is necessary to cleanse and preprocess the acquired news data to reduce any unwanted interference, rectify errors, and establish uniform formats.

Efficiency of information retrieval can be enhanced by implementing techniques like text normalization, tokenization, and stemming. To utilize the speech recognition and natural language processing technologies provided by the Alan AI platform, the application must be integrated with the platform. This can be achieved by leveraging the application programming interfaces (APIs) and software development kits (SDKs) provided by Alan AI. To adhere to user experience standards, it is essential to create a voice interface that offers clear feedback and instructions. This interface should be user-friendly, enabling users to effortlessly request news topics, navigate through news categories, and interact with the application using natural language commands.

To develop algorithms that can assess user interactions, preferences, and behavior, it is necessary to train the artificial intelligence model of the application using machine learning techniques. This will enable the application to customize the dissemination of news to everyone on an individual basis. Implement a news recommendation system that considers user preferences, browsing history, and popular themes to deliver pertinent news articles to users. This system should utilize user input and employ machine learning techniques. Perform comprehensive testing to verify the usability, accuracy, and user satisfaction of the program. Incorporating beta testing is essential to gather user feedback and implement any required improvements.

Finally, it is essential to deploy the application on suitable platforms, such as mobile devices and smart speakers, to ensure optimal performance and interoperability across a diverse variety of devices. Furthermore, it is imperative to regularly assess and enhance the software to meet evolving client demands, resolve problems, and integrate novel functionalities. Figure 1 shows an activity diagram which is a flowchart that shows activities performed by a system. Figure 2 shows the working of voice assistance and figure 3 shows the API request and response.

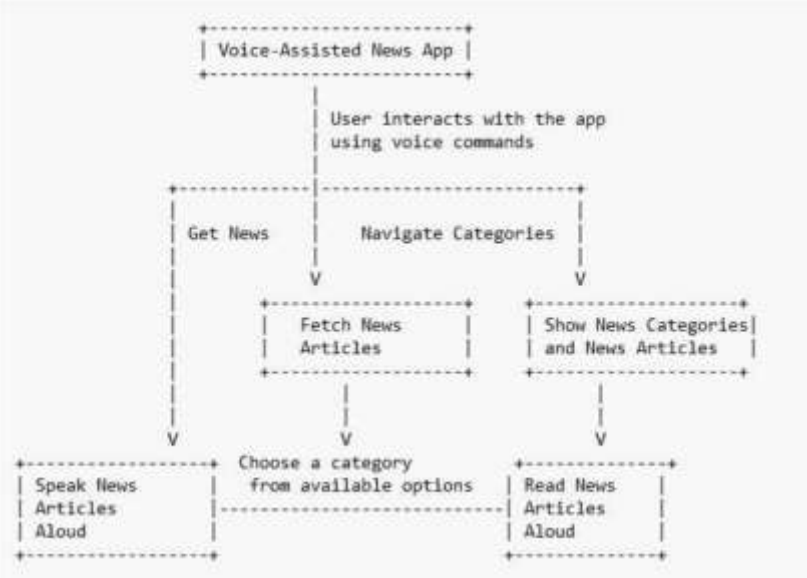

Figure 1. Activity Diagram

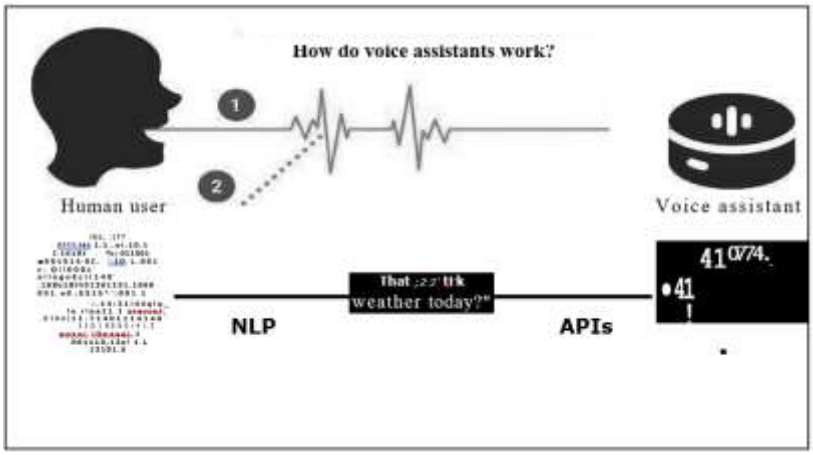

Figure 2. The working of voice assistance

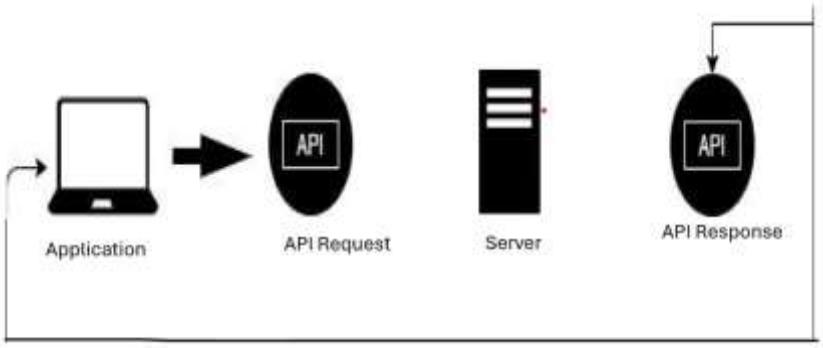

Figure 3. The API request and response

Results and Discussion

To develop the objectives of the voice-assisted news app, it is crucial to clearly define its aims and identify the essential features, capabilities, and user experience components it should provide. Firstly, it is advisable to compile an extensive dataset of news articles sourced from diverse outlets, including both national and local publications, and categorize them accordingly.

This will guarantee that the news information is precise and current. Verify the dataset's currency and ensure it accurately reflects the population.

In the subsequent phase, the acquired news data must undergo cleansing and preprocessing to reduce noise, rectify errors, and standardize formats. Efficiency in information retrieval can be enhanced by implementing techniques such as text normalization, tokenization, and stemming. To utilize the speech recognition and natural language processing technologies provided by the Alan AI platform, the application must be integrated with the platform. This can be achieved by leveraging the application programming interfaces (APIs) and software development kits (SDKs) provided by Alan AI.

To adhere to user experience standards, it is essential to create a voice interface that offers clear feedback and instructions. This interface should be user-friendly and enable users to effortlessly request news topics, navigate news categories, and interact with the app using natural language commands. To develop algorithms that examine user interactions, preferences, and behavior, utilize machine learning techniques to train the artificial intelligence model of the application. This will enable the application to customize the dissemination of news to everyone on an individual basis. Implement a news recommendation system that considers user preferences, browsing history, and popular themes to deliver pertinent news articles to users.

This system should utilize user input and employ machine learning techniques. Perform comprehensive testing to verify the usability, accuracy, and user satisfaction of the program. Incorporating beta testing is essential to gather user feedback and implement any required improvements. Lastly, it is essential to deploy the application on suitable platforms, including mobile devices and smart speakers, to ensure optimal performance and interoperability across various devices. Furthermore, it is imperative to regularly assess and enhance the software to adapt to changing client demands, resolve problems, and integrate novel functionalities. The figure below 4 shows the outcome of the system for NewsEra and news by category.

Figure 4. The outcome of the system for NewsEra

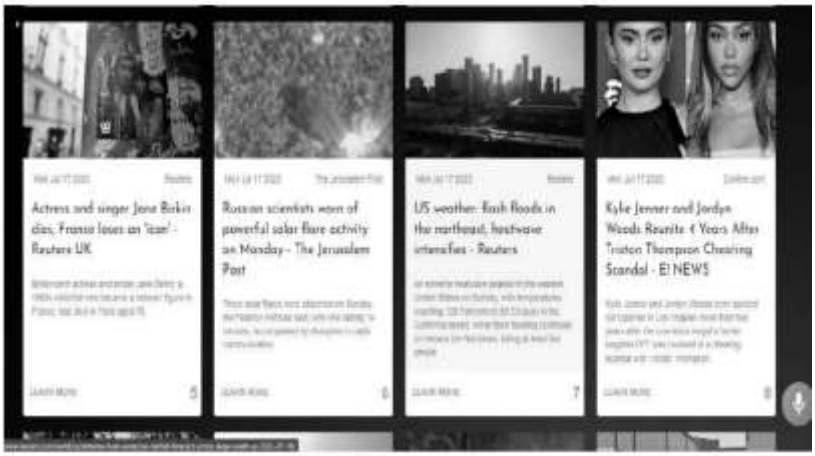

Figure 5. The outcome of the system for news by category

Conclusion

If Alan AI were integrated into a voice-activated news app, it might potentially alter the way users receive news. The application offers a fast and personalized news experience by leveraging the capabilities of natural language processing and machine intelligence. Utilizing voice commands enables users to easily interact with the app, access up-to-date and pertinent content, and explore various categories and trending subjects. The app's ability to understand user preferences and adapt its suggestions enhances user satisfaction and involvement. Nevertheless, for voice-assisted news applications to gain widespread use, substantial enhancements in speech recognition precision and resolutions to privacy concerns are necessary. In summary, the voice-assisted news app powered by Alan AI represents a noteworthy advancement in delivering a tailored and engaging news consumption experience.

The Voice Assisted News App, employing Artificial Intelligence (AI) and Natural Language Processing (NLP) technology, offers users a smooth and personalized news experience, signifying a notable progress in news consumption. The app has revolutionized user engagement with news by offering a dynamic and user-friendly platform that enables real-time access to updates and stories, facilitated by the capabilities of Alan M. The Voice Assisted News App sets a new standard for delivering news in the future by demonstrating the vast capabilities of AI and NLP in enhancing user engagement with digital information. Ultimately, the Voice Assisted News App, driven by Alan AI, offers consumers a state-of-the-art and efficient platform for remaining informed about current events. The app's functionalities will progress in tandem with the advancements in AI and NLP technologies, thereby improving the experience of consuming news and establishing its dominance as a frontrunner in the realm of voice-assisted applications.

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