

Conversational Voice Controlled News Application

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Abstract - As we all know that the constant source of news and information for us till now was Newspaper. Till now there are many technological advancements like radios, televisions and many more which have led to newer ways of delivering news and information. As there were many technological advancements in the field of Artificial Intelligence, many researchers and developers are making use of this in many fields. In this paper, we have presented a web-based service that is a fusion of the revolutionary new Alan Studio, News API, Weather API, Calendar API and React. So, we come up with an idea of Voice Controlled Web Application which provides a very simplistic approach and ease to the user as it will save their time, will be responsive and will work well with any device such as laptop, tablet or mobile phone. As we all know future generation doesn't have enough time to read newspaper so, they either are not aware of the news or they rely on their smartphones for the news. Sometimes they don't even get much time to read it so this application to get the news in more easy way which will save their time and physical as well as mental work. This web application is completely interactive and user will be able to get news from any topic of his/her interest just by speaking. The user can access the news by category, popular news channels, by terms, etc. The web application will reduce the amount of human physical as well as mental effort required by the user to perform previously and will offer a much more interesting way of getting news and information.

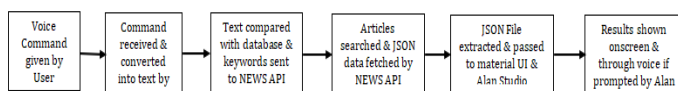
newspapers, radios, televisions are traditional news gathering methods and are succeeded for a long time. Nowadays, we are very much familiar with the use computers, tablets and smartphones for getting news and information through the use of Internet. Although, these methods are available, news gathering doesn't seems to be fun and much interactive. Recently, voice control has become one of the most leading demand skills.

As we know, future generation are not getting enough time because of their busy schedules to sit down and read newspapers, magazines, etc. to get them informed of latest events happening all around the world.

It seems that the well-practiced habit of reading and attaining news and information have been forgotten which was followed by a huge part of the society. It is observed that with the advancements in technology, newer ways of news reading are replacing old ones. There are various news app that gives e-paper and gist of news us major, big news apps that give e-papers and a gist of news as notifications or updates for their readers and users. As we know, the quickest and most effective way to gather knowledge about states and global news is by reading news. News agencies cover all subjects of interest like Fashion, Lifestyles, Politics, Sports, Entertainment, Business, Health and more, the reader is constantly updated about all these facts.

Traditional methods of data entry fail the requirements to support all type of users. So, it is necessary to develop an application with up-to-date usability for the users. Most of the recent applications lack the accessibility features that may hinder some users for example the visually impaired users.

The application has a hands-free approach to a great extent and makes the user interact more often as we know that the user usually prefers to use voice command rather than giving commands by typing. The proposed system has the biggest advantages that the voice recognition is not limited to just mobile phones, laptops or computers but in all type of devices that users interact with like smart televisions, smart watches etc. Nowadays, voice



Key Words: Artificial Intelligence, Voice Assistants, Alan Studio, React, News API, Weather API, Calendar API.

1. INTRODUCTION

In today's world, as we know many advancements have been made in the field of technology, and voice control is one of the foremost technology which are gradually being implemented on one or more devices. As we all know,

recognition is also being installed in vehicles. The system is user friendly and very easy to use.

Day by day voice control technology is reaching new heights and this system will also help in resolving one other problem that a normal user faces daily.

The system also takes care of user’s privacy.

1.1 Recent Developments in AI:

- Its ability to write Essays, Blogs and even Computer Programs,
- Detection of diseases from medical images that even experienced doctors might miss sometimes,
- It has the ability to understand its surrounding and to act upon in requirement,
- Giving birth to self-driving vehicles. This allows vehicle commuting to be safe and fuel-efficient at the same time.
- Recent developments in Artificial Intelligence has led to priority-based prediction of social media posts based on the user’s interest.

2. LITERATURE SURVEY

In today’s world voice recognition play’s a vital role in everyone’s day-to-day life using a smart phone or a smart device. It has limitless scope and can be used in different ways. For example:

Table -1: Outcomes of voice recognition projects

Sr. No	Title	Conclusion
1.	Design of an Intelligent Voice Controlled Home Automation System created by Sonali Sen, Shamik Chakrabarty, Raghav Toshniwal, Ankita Bhaumik	This project will enable us to bring every appliance at every corner of our home under our control from a single point without having to get up and manually switch on or off the appliance.
2.	Voice controlled surgical suite created by David F. McCall, Leslie M. Logue, Francis J. Zelina, Matthew V. Sendak, Julie R. Hinson, Ward L. Sanders, Steve Belinski, Brian E. Holtz	The system includes a voice recognition device adapted to recognize a plurality of predetermined speech commands from a single human and to generate a corresponding set of command output signals.

3.	Preventing false wake word detections with a voicecontrolled device created by Ian W. Freed, William Folwell Barton, Rohit Prasad	Techniques are provided to allow for multiple operating modes in which different recognition parameters are employed in recognizing wake words that activate the natural language control functionality of a computing device
4.	Voice controlled wireless communication device system created by Stephen S. Burns, Mickey W. Kowitz	The system evaluates the confidence level of the of the speech recognition process. If the confidence level is high, the system automatically builds the application command or creates the text file for transmission to the communication device. Alternatively, if the confidence of the speech recognition is lower, the recorded audio data file is routed to a human transcriber employed by the telecommunications service, who manually reviews the digital voice file and builds the application command or text file.

The above table show the ability and future of voice recognition and control. Voice recognition is used in another field and it stretches its scope into a new dimension in the proposed system. The proposed system enables user to set up a combination that provides a useful, creative and user-friendly experience.

The top 10 most downloaded apps world wide in Q1 2022 according to Search Engine Journal were:

- 1) TikTok
- 2) Instagram
- 3) Facebook
- 4) WhatsApp
- 5) Telegram
- 6) Shopee
- 7) Snapchat
- 8) Messenger
- 9) Capcut
- 10) Spotify

So, this data clearly indicates that no news app managed to get in top 10 thus showing that users do not like to install news app and rely on web searches. This proposed system helps the user, as it does not ask the user to install anything in order to use the system.

3. METHODOLOGY

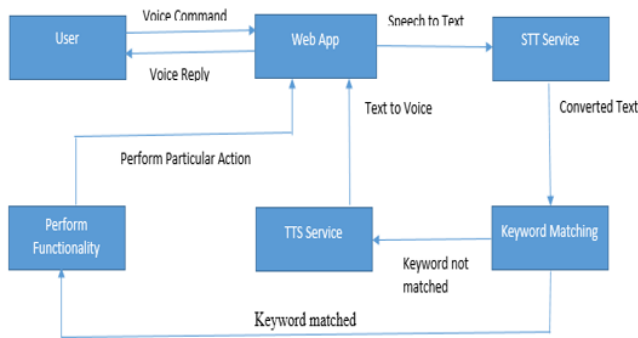


Fig -1: Architecture of the Web Application

The above figure shows how the system is working. The user first provides a voice input to the web application. The application then sends the signal to the speech to text service. The speech to text service then converts the voice signal and then converts it into text. This text is then sent for keyword matching. If the keywords are matched then the functionality that the keyword is related to is performed but if the keyword is not matched then an error message is sent to the web app and then to the user. After the task is done, the results are then shared to the web app which then replies to the user with a voice reply.

4. TOOLS USED

- **Alan** is the advanced Conversational Voice AI Platform and it gives the ability to add a voice assistant to any existing application.
- **Material-UI** is a library that allows us to import and to use different components to create a user interface in our React applications.
- **News API** is a easy-to-use REST API that returns JSON search results for current news.
- **React (also known as React.js or ReactJS)** is a free and open-source front end library for building user interfaces based on UI components.
- **OpenWeatherMap** provides weather data around the world via API, including current weather data, forecasts, historical weather data for any geographical location.

- **HTML (HyperText Markup Language)** is the basic building block of the Web. It defines the structure and meaning of web content.
- **Cascading Style Sheets** is a language describing the presentation of a document written in a markup language such as HTML.
- **JavaScript** is a lightweight, interpreted programming language.

4. IMPLEMENTATION

The project implementation is divided into three parts. This are Front-end development, API connections with front-end and Alan AI studio Back-end programming.

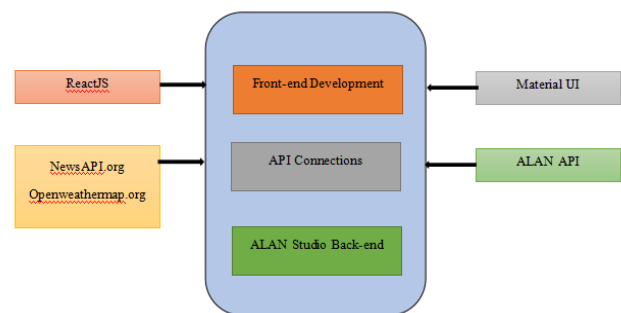


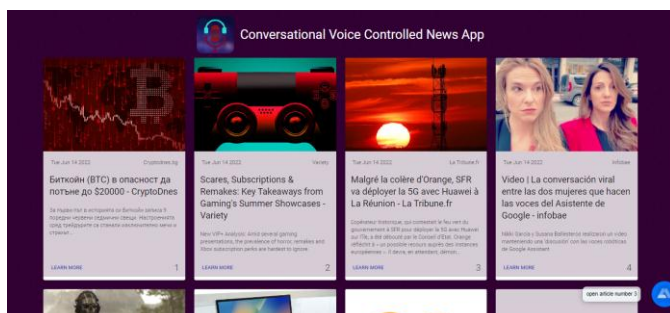
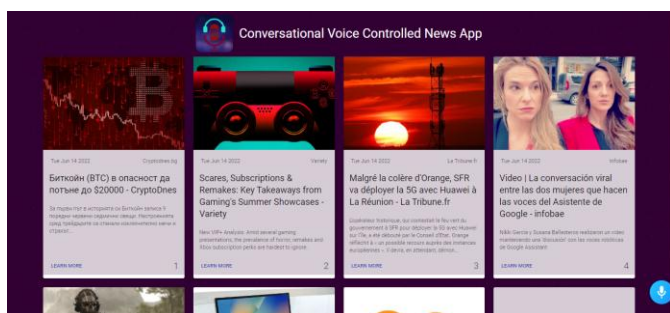
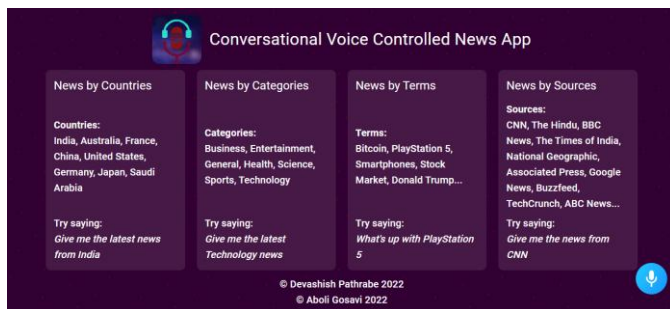
Fig -2: Implementation

The front-end part is done using ReactJS and Material UI. The key reason of taking ReactJS for front-end is that it allows us to create web application with large data and also the changing of data doesn't require us to reload the page. Material UI on the other hand is a famous React UI framework. It allows the developer for quick development by providing various components.

The API is nothing but a messenger which takes request and tells the system what the user wants and returns the response. An API is the real back-end connectivity engine between various other applications. In this project we have used three API's. Every application has it's API key to connect with your application. The three API keys are News API, OpenWeatherMap API and Alan AI. By using News API one can search and retrieve latest ongoing news around the world. By using OpenWeatherMap API it provides weather data all around the world via API, including current weather data, forecasts, historical weather data for any geographical location.

Alan conversational platform gives very strong support for your application by providing it's easy to integrate SDK, JavaScript scripting Alan Studio to customize Alan according to our application.

5. SCREENSHOTS



6. APPLICATIONS

- It can convert voice to text
- Users can navigate the entire web-app using only voice commands.
- Users can have a small talk.

7. CONCLUSION

This application is deployed and running on Netlify cloud at <https://conversational-voice-controlled-news-app.netlify.app/>.

This application gives an exiting new, much faster, more reliable, easy-to-use and a very nice user-friendly experience which will help the user to stay informed and keeps updated with the events happening around the world. This system distinguishes by News by Countries(Card 1), News by Categories(Card 2), News by Terms(Card 3) and News by Sources(Card 4). In this system, various news articles are fetched which may or may not be related to the overall search query but related to the particular keyword identified by the system. This system also fetches weather information like it will tell weather, temperature, pressure, humidity and many more. For user best experience, he/she can have a small talk.

This system enables large number of users to stay informed and updated in as less time as possible. It makes getting news and information in a very easy and interesting way. It will also helps physically challenged people as it has been made with latest advancements and enables users to stay updated without their health condition hampering them.

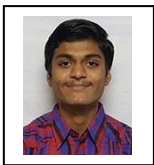
This system will continue to develop and more functionalities can be added to it. The system is very much flexible and compatible to almost any device(computers, smartphones, tablets, etc.) that has the ability of voice command. We hereby conclude that we have successfully completed our project and conclude our research.

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BIOGRAPHIES



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