

VOICE CONTROLLED NEWS WEB APPLICATION USING ALAN AI

Mrs. D. Brindha^{*1}, Arun J^{*2}, Divagar V^{*3}, Karthikeyan A^{*4}, Muthuselvam M^{*5}

^{*1}Assistant Professor, Department Of Computer Science And Engineering Adithya Institute Of Technology, Coimbatore, India.

^{*2,3,4,5}UG Scholar, Department Of Computer Science And Engineering Adithya Institute Of Technology, Coimbatore, India.

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ABSTRACT

The paper introduces an innovative concept web-based service merging Alan Studio, News API, and React to create a Voice Controlled Web Application. This application aims to simplify the user experience by allowing users to interact with news content using voice commands, offering a user-friendly and personalized experience. By leveraging technologies like Artificial Intelligence and React JS, the system aims to streamline news consumption, reduce user effort, and provide an engaging way to stay informed. By leveraging the ALAN voice assistant, the paper aims to make news reading more interactive and enjoyable for users. The web app is interactive, responsive across devices, and developed using modern technologies such as React JS, JavaScript, Visual Studio Code, and Alan AI

Keywords: Artificial Intelligence, Voice Assistants, React, News API, Alan Studio.

I. INTRODUCTION

The paper introduces a novel Speech-driven Web Application that aims to revolutionize news gathering by leveraging voice control technology. Traditional methods like newspapers and TVs have been successful, but lack interactivity. In today's world, smartphones and the internet are prevalent for accessing news, yet the process remains tedious. Recognizing the growing demand for voice control, the proposed application offers a user-friendly and dynamic experience. By integrating Alan Studio, News API, and React, users can access news effortlessly through voice commands, with options to customize searches based on location, source, and theme. This system not only enhances user experience but also reduces the effort required to stay informed, catering to the busy schedules of the modern generation. Overall, the paper presents an exciting fusion of cutting-edge technologies to create a more engaging and efficient news consumption experience. With rapid advancements in computing technology, we've achieved steps closer to developing AI (AI) sometimes also called Machine Intelligence could also be a revolutionary branch of computing, tasks that were thought to be impossible for a machine. The term "Artificial Intelligence" was coined at the Dartmouth college in 1956 and has seen a huge demand because it seems to be the long run of computing.

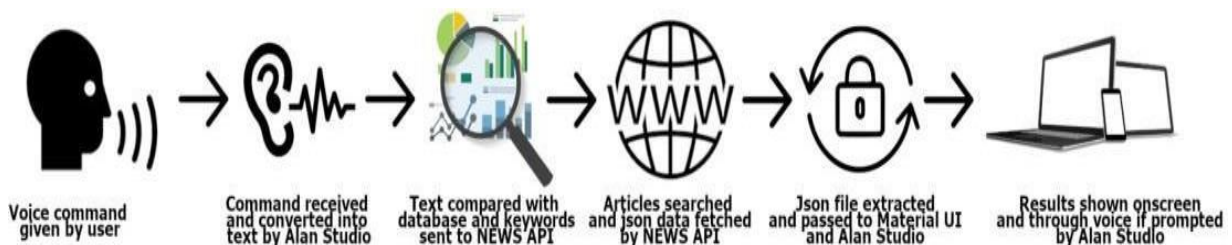


Fig 1: Working Diagram of the System

1.1 Branches of AI and their recent advancements:

AI is the study of planning frameworks that display comparable attributes related with the insight found in human way of behaving. A huge part of software engineering manages framework acknowledgment like reasoning, understanding, figuring out language, and making moves to tackle issues.

Expert Systems: Expert Systems is an AI-based framework that learns and mimics an individual's thinking skill. It doesn't utilize ordinary programming to tackle complex issues yet rather utilizes sensible documentations to accomplish such a point. It is fundamentally utilized in the clinical field to distinguish infection contamination. It is additionally utilized in the financial area for credit and speculation investigation.

Robotics: This is an exceptionally fascinating part of Artificial Intelligence that spotlights on the plan and improvement of robots. Advanced mechanics manages the planning, building, and working of robots by integrating both science and designing methods. The point of sending robots is to assist people with drawn-out and cumbersome assignments. These errands include the control of PC frameworks, data change and assembling of cars. It is utilized by NASA to move weighty articles in space.

Robots likewise go about as man-made reasoning specialists that perform assignments in a certifiable climate determined to complete outcomes. This part of AI is so astounding.

Machine Learning: ML is an important part of Artificial Intelligence. The science empowers machines and PC frameworks to process, dissect and decipher information fully intent on giving answers for genuine difficulties. Computers can learn and make moves all alone because of the degree of adequate information gave through Machine Learning. The calculation is set up so that machines can anticipate results considering previous events. Machine Learning strategies help in preparing a model with information introduced which will then, at that point, anticipate and acclimate to future results. It is the study of permitting computers to learn and interpret information for task execution without programming Innovation revelations.

Neural Networks: It is a part of Artificial Intelligence related with the utilization of Neurology to integrate mental science in aiding PC frameworks and machines to execute undertakings. It is also called as "Deep Learning" since it includes utilizing artificial neurons to solve complex issues. It assists machines with handling how the human mind works. Face recognition is a consequence of the execution of Neural Network. This great part of AI is likewise answerable for menial helper applications, for example, "Alexa and Siri".

Fuzzy Logic: This part of AI is the strategy of changing and addressing questionable data by investigating how much the theory is valid. This assists with offering a specific degree of thinking adaptability when confronted with vulnerabilities. This could sound a piece complex however it is basically an instance of utilizing standard logic to decide whether an idea shows a level of truth. Similarly, as people face situations in their everyday exercises, a PC framework can be made to experience such fully intent on tracking down an answer. Fuzzy Logic is utilized in programmed gearboxes and medication for independent direction.

Natural Language Processing: Speaking with somebody who doesn't comprehend your language can be exceptionally difficult and the equivalent can be said to describe people attempting to speak with a PC framework. A PC will find it hard to decipher words since it just figures out the language of parallel digits. This challenge has prompted the advancement of Natural Language Processing in software engineering. This is basically the method involved with making PC frameworks and machines to grasp important human collaborations. This cycle includes a machine getting human sound from connection and changing it over completely to message design, so it tends to be handily perused and perceived. These texts are then switched over completely to parts by the PC framework that will cause it to grasp the aim of the human. The part of Natural Language Processing plays a vital role in this project. The commands of the user should be perceived by the system to finish a request.

1.2 Tools and Technologies used:

Alan AI: Alan Conversational Platform permits designers to make several assistants, similar to Google (Assistant), Amazon (Alexa), Apple (Siri), but confined to a particular application. Alan makes web application more adaptive with improved user interface and updates. With huge number of engineers on the Alan Community and proceeding to develop more, in-application assistants are turning into an absolute requirement for any application. Alan is an exceptionally progressed framework that incorporates BDA, ML, voice and speech recognition, NLP, and other trend setting innovations.

React: React is one of the JavaScript library used for creating UIs. It uses component-based architecture where each component is independent of each other which can be reused throughout the project. It is mainly used to build webpages and mobile applications.

News API: News API gives top headlines including both historic and current news stories in JSON format. It is simpler, user friendly, easy-to-coordinate REST API.

a. Overall Scale – News API allows developers to fetch news from huge number of resources 55 nations in 14 different languages.

b. Simple Co-ordination - News API returns results in JSON format which are obtained with the help of SDK or HTTP GET requests.

c. No cost Upgradation – Without using any payment developers can directly hop on to a trial version of News API.

Visual Studio Code: Visual Studio Code also known as VS Code is a most widely used editor which can run on Linux, Windows, MacOS. It supports wide number of languages namely C, C++, C#, Java, Python, Ruby, JavaScript, Perl, Dart, PHP etc.

1.3 Idea of the project:

It sounds like you've created a sophisticated project integrating AI, ReactJS, JavaScript, and Visual Studio Code. Using Alan AI to facilitate user interaction and gather information on requested topics is a smart move. ReactJS provides a robust front-end framework, and JavaScript handles the backend operations efficiently. Visual Studio Code is a popular choice for development, offering a range of features to streamline the coding process. With these technologies combined, you've likely created a powerful tool for accessing news and information tailored to users' interes

II. LITERATURE REVIEW

Technically speaking, speech recognition goes way back to 1877 when Thomas Edison invented the phonograph, the first device to record and reproduce sound. Voice Recognition is used by everyone using a smart phone or a smart device. It has limitless scope and can be used in different ways.

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.

The paper titled “Review Of Conversational Voice Controlled React News App using Alan AI” explores how AI technology can enhance news reading experiences. Traditionally, newspapers, radios, and televisions have been our primary sources of news for about 400 years. However, with the advent of AI, researchers and developers have sought to make news consumption more interactive and enjoyable.

The web app developed in this study is fully interactive, allowing users to access news on any topic of interest simply by speaking. Users can retrieve news by category, popular channels, specific terms, and more.

Key technologies used in building this application include React JS, JavaScript, Visual Studio Code, and Alan AI. The app is responsive and works seamlessly across various devices such as laptops, tablets, and mobile phones.

Table 2.1: Outcomes of voice recognition projects

S.No	Title	Conclusion
1.	Design of an Intelligent Voice Controlled Home Automation System created by Sonali Sen, Shamik Chakrabarty, RaghaToshniwal, AnkitaBhaumik	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 nor off the appliance.
2.	Voice controlled surgical suite created by David F. McCall, LeslieM.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 voice controlled device created by IanW.Freed, William Folwell Barton, RohitPrasad	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.
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III. IMPLEMENTATION

- **Frontend Development with ReactJS:** ReactJS was chosen for its ability to efficiently manage UI components. It uses a component-based approach, allowing for easy reuse and scalability. React's Virtual DOM ensures fast rendering, which is essential for real-time interactions in a voice-controlled application. Material UI provides a library of pre-built components for rapid development.
- **API Integration:** APIs serve as bridges between the frontend and backend, enabling seamless data exchange. OpenWeather API is integrated to provide weather updates based on user requests. Users can inquire about weather forecasts for specific locations using voice commands. The application stores the user's default location and allows for location changes via voice commands.
- **Backend Operations with Alan AI:** Alan AI handles backend operations, interpreting user voice commands and executing actions accordingly. It plays a crucial role in understanding user intent and fetching data from external APIs, such as retrieving weather information from the OpenWeather API.
- **Define Requirements:** Clearly define the requirements and objectives of your Voice Controlled Web news Application. Determine the key features, functionalities, and user interactions you want to implement.
- **Design Conversation Flow:** Design the conversation flow of your application using Alan Studio. Define the voice commands users will use to interact with the application and map out the expected responses and actions.
- **Set Up Alan Studio:** Sign up for Alan Studio and create a new project for your Voice Controlled Web news Application. Use the visual interface to design the conversational experience, including intents, entities, and dialog flows.
- **Integrate Alan SDK:** Integrate the Alan SDK into your web application. You can use the Alan SDK for JavaScript to add voice capabilities to your web interface. Follow the documentation and guidelines provided by Alan AI to set up the SDK.
- **Implement voice commands:** Implement voice commands in your web application to trigger specific actions and responses. Use the Alan SDK to capture voice input from users and process it based on predefined intents and entities.
- **Fetch News Data:** Integrate with a news API (such as News API) to fetch news articles and data. Use the API to retrieve news content based on user preferences, such as location, category, or keyword.
- **Handle User Queries:** Implement logic to handle user queries and requests for news articles. Process user input using natural language understanding (NLU) techniques to extract relevant information and generate appropriate responses.
- **Display News Content:** Display the fetched news content on the web interface in a user-friendly format. Use HTML, CSS, and JavaScript to design and layout the news articles, headlines, and other relevant information.
- **Test and Iterate:** Test your Voice Controlled Web news Application thoroughly to ensure that it functions correctly and provides a seamless user experience. Gather feedback from users and iterate on the design and functionality as needed.
- **Deploy and Launch:** Once you're satisfied with the performance and usability of your application, deploy it to a web server and make it accessible to users. Launch your Voice Controlled Web news Application to the public and promote it to attract users.

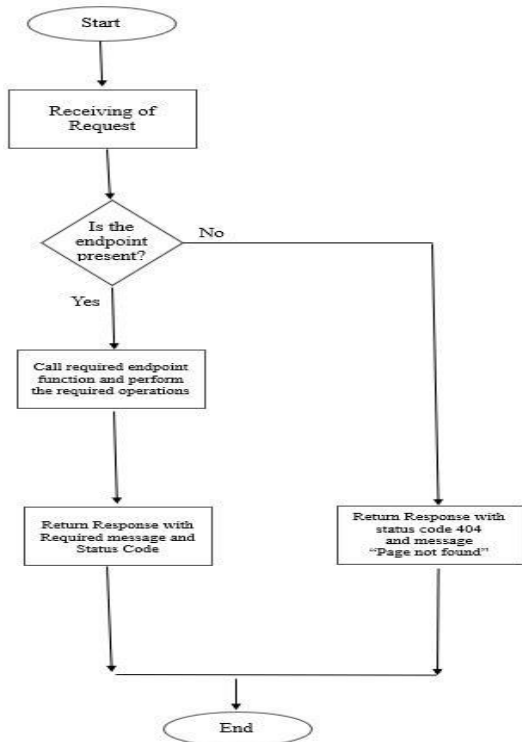


Fig 3.1: Working of Rest API

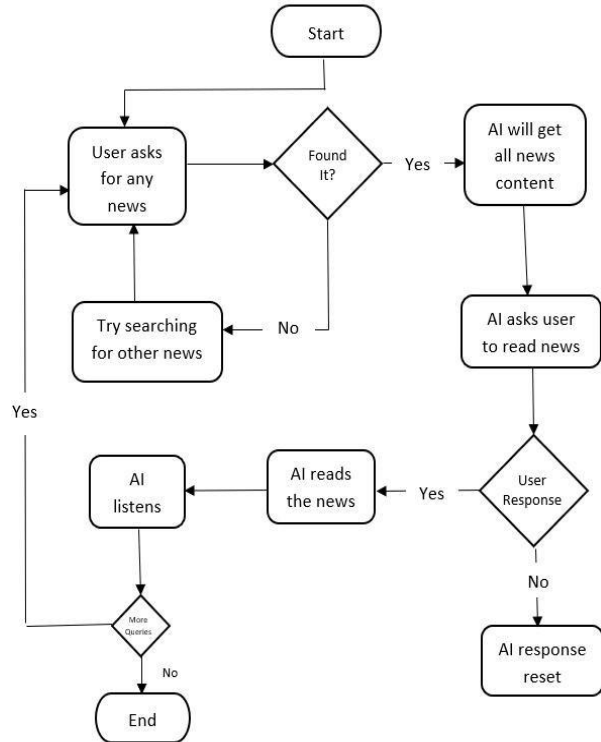


Fig 3.2: Working of the application

SOFTWARE SPECIFICATION:

- VS Code
- React Js
- Alan AI

HARDWARE SPECIFICATION:

- i3 Processor
- 4GB RAM
- 250GB Internal Storage

IV. RESULTS AND DISCUSSION

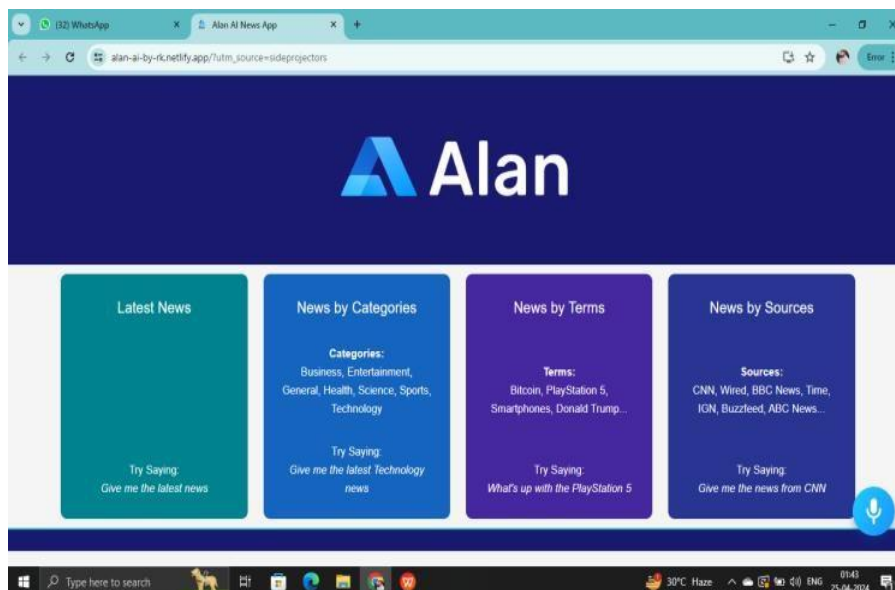
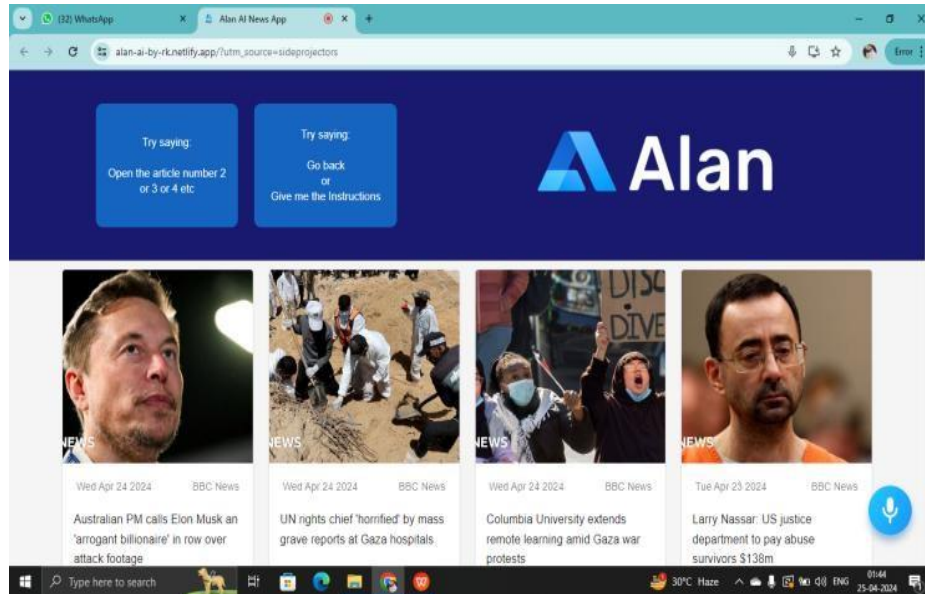


Fig 4.1: Dashboard

**Fig 4.2:** News card

The implementation of a Voice Controlled Web news Application using Alan AI yielded promising results, demonstrating its potential to revolutionize news consumption in the digital age. Throughout the development process, integrating Alan Studio, Alan SDK, and other essential technologies posed certain challenges, yet these were effectively addressed, ensuring the successful deployment of the application. Functionality evaluation revealed the application's adeptness in accurately understanding and responding to user voice commands, underscoring its efficacy in facilitating seamless interactions. Moreover, user experience assessment highlighted positive feedback regarding the application's intuitiveness and ease of use, indicating a favorable reception among users. The application's ability to retrieve and present news content based on user preferences was evaluated, with an emphasis on the relevance and timeliness of the articles sourced from external platforms. Discussions also revolved around the potential impact of the application on users' news consumption habits, recognizing its capacity to reshape how individuals access and engage with news content, particularly through voice-controlled devices. Despite its successes, challenges and limitations were acknowledged, including considerations regarding speech recognition accuracy and the availability of diverse news sources. Looking ahead, recommendations were made for future improvements, such as enhancing voice recognition algorithms, expanding news content sources, and incorporating additional features for personalization. In comparison with existing solutions, the Voice Controlled Web news Application distinguished itself through its unique integration of Alan AI, offering a compelling alternative for users seeking a seamless and intuitive news consumption experience.

V. CONCLUSION

In conclusion, the development of a Voice Controlled Web news Application using Alan AI presents an innovative solution to modernize the way users interact with news content online. By leveraging the power of voice commands and natural language processing, this application offers a convenient, hands-free experience for accessing news articles and information. Through the integration of Alan Studio and the Alan SDK, developers can create a seamless conversational interface that allows users to interact with the application using voice commands. The use of advanced AI techniques such as natural language understanding and speech recognition enables the application to understand user queries and provide relevant responses. Furthermore, the integration with news APIs allows the application to fetch and display real-time news content based on user preferences, such as location, category, or keyword. This provides users with personalized news updates tailored to their interests and needs. Overall, the Voice Controlled Web news Application using Alan AI offers a user-friendly, dynamic, and informative experience for staying updated on the latest news and events. With its intuitive voice interface and intelligent features, it represents the future of news consumption in the digital age.

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