IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 6, May 2023

A Platform for News Application with Voice Assistant Using AI

Mrs. M. C. Jaya Prasanna[1], J. Rajarajeswari[2], A. Sakthi Oviya[3], S. R. Samyuktha[4]
Assistant Professor, Anjalai Ammal Mahalingam Engineering College, Thiruvarur, India[1]
Students, Anjalai Ammal Mahalingam Engineering College, Thiruvarur, India[2,3,4]

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, and React. 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. 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, desktop. 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.*

Keywords: Web Technology, Alan AI, Voice Assistant, Artificial Intelligence.

I. INTRODUCTION

Artificial intelligence (AI) is a set of technologies that enable computers to perform a variety of advanced functions, including the ability to see, understand and translate spoken and written language, analyze data, make recommendations, and more.

AI is the backbone of innovation in modern computing, unlocking value for individuals and businesses. For example, optical character recognition (OCR) uses AI to extract text and data from images and documents, turns unstructured content into business-ready structured data, and unlocks valuable insights.

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.

This research project is an effort to make news reading more fun and interactive using the ALAN voice assistant. The web app is completely interactive and the user is able to get news from any topic of interest just by speaking.

II. NEURAL NETWORK

Neural network is a way to mimic the function of the human brain. In the human brain there are connections of billions of neurons which are connected with each other by synapses and neurotransmitters which help to store memory and help to retrieve the information at the moment of need. In artificial neural networks there are node layers in which each neuron is connected by each other and there are many hidden layers and also contain one output layer. Each node has some threshold value and associated weight. If data in node exceeds threshold value, then data is transferred to another node.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 6, May 2023

III. MACHINE LEARNING

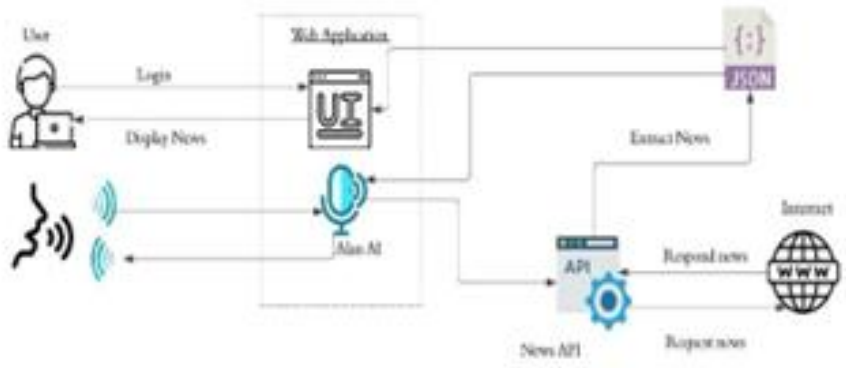
In Machine Learning we study computer algorithms. The algorithm improves itself by experience and data. Machine learning algorithms are trained by large amounts of data to do a task without being explicitly trained to do. Complex problems are solved economically using machine learning algorithms.

IV. NLP

Natural Language Processing is a branch of artificial intelligence which helps to process the language and respond to the query of the user in voice. NPL summarises the large volume of texts rapidly, even in real time. You have also interacted with NLP through Alexa, Google assistant, speech to text dictation and customer service chat bots.

V. SYSTEM ARCHITECTURE

The following figure depicts how the system works. It shows how the system interacts with the user and how and which processes take place in various cases. The user provides a voice input to the web app. The app sends the signal to the Speech to text service. The STT service coverts the voice signal and converts it into text which is then sent for the 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 performed, the results are then shared to the web app which then replies to the user with a voice reply.



SYSTEM ARCHITECTURE

TOOLS USED:

React JS

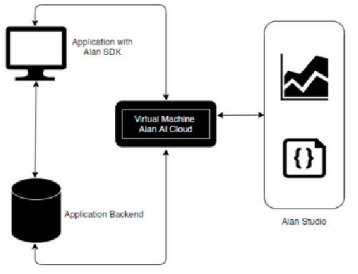
React is a JavaScript library for developing user interfaces. React makes it effortless to create responsive UIs. Design basic views for every state in any application, and react will accurately update and render just the correct parts when user's data updates. React able user to construct encapsulated parts that manage their own state, and then combine them to make dynamic UIs. Since component logic is constructed in JavaScript instead of templates, you can easily pass detailed data to any app and keep state out of the DOM. React has been made from the start for continuous adoption, and you can use as few or as much React as you need. Whether you want to get a gist of Reactor include some features to a basic HTML page, or start a React-powered app, the links in this section will help you start.

ALAN STUDIO

Alan adds an entire serverless environment to construct complex and trustworthy in-app voice assistants and chat bots. Alan studio is a great tool that helps in seamless voice recognition. There is no need to make spoken language models, train the speech recognition software, launch, and host voice parts — the Alan AI backend does the most of the work. The voice experience for any app can be constructed and made by a single developer, rather than a team of Machine Learning and Dev Ops experts. With Alan, you can go beyond the abilities of touch and type interfaces and voice

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 6, May 2023

enable any complex workflow or function in any app. Voice scripts are constructed in JavaScript, which makes them heavily modifiable and flexible. The following flowchart depicts how Alan Studio works.



Alan AI workflow

News API

A news API connects online news content and applications- allowing organizations and individuals to automatically scan, extract, analyze, and enrich data from online news sources, which is then used for a wide range of purposes.

News APIs collect and parse data from news websites, articles, and other web data sources. Powered by AI, they use advanced Natural Language Processing (NLP) and Machine Learning (ML) to recognize categories, sentiments, topics, persons, dates, events, and other parameters. Then they tag the data with contextual meta-data and deliver it in a machine-readable format that existing software can use. This lets monitoring companies use data more efficiently – deriving actionable insights that help their customers decide, for example, to invest in a new company, discontinue working with an existing supplier, or run a new PR campaign in reaction to a new trend or backlash against a new product.

News API is a basic HTTP REST API for finding and collecting live articles from all over the web. It can help any simple queries like:

- What famous stories are TechCrunch currently?
- What latest articles were published about the next iPhone?
- Has my company or product been mentioned or reviewed by any blogs recently? You can find articles with any combination of the following criteria:
- Keyword or phrase. Eg: find all articles containing the word 'Apple'.
- Date published. Eg: find every article published today.

Material-UI is a library that allows us to import and to use different components to create a user interface in our interface in our React applications.

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 high-level programming language. It offers several features like.

1. Dynamic typing
2. First-class functions
3. Prototype-based object-orientation
4. Curly-bracket syntax

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 6, May 2023

Visual Studio Code:

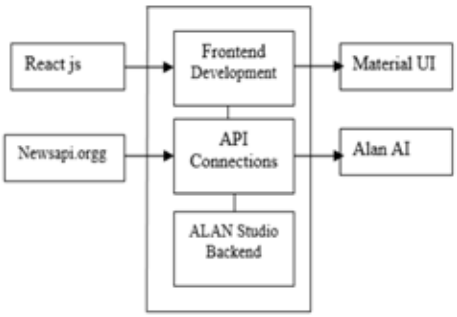
Visual Studio Code also known as VS Code is a most widely used editor which can run on Linux, Windows, MacOS. It supports wide number of languages namely C, C++, C#, Java, Python, Ruby, JavaScript, Perl, Dart, PHP etc. It became so popular, as developers find it simpler among the other editors available in market.

Its properties are as follows:

a. Intelligent Code Completion
b. Streamlined Debugging
c. Fast, Powerful Editing
d. Code Navigation and Refactoring
e. In-Product Source Control
f. Top Extensions
g. Embedded Git & Terminal

VI. IMPLEMENTATION

The project implementation is often divided into three parts which are Frontend development, API connections with frontend, and ALAN AI Studio Backend programming. The front-end part of the project was implemented using React and Material UI. As mentioned above, ReactJS is an Open-Source JavaScript Library maintained and developed by Facebook, it is used for the development purpose of user Interface Components.



Overall implementation

VII. FUTURE WORK

To move ahead further we can add more functionality in our application. As soon as ALAN AI will update their software with more language like Hindi, Japanse and other languages. Then our app can also take command in many different language and can be used globally.

VIII. CONCLUSION

Reading newspapers takes up tons of your time and therefore the reader usually spends reading about articles during which they're not interested. By using this project, the user can get to listen to about all the important headlines of their chosen topic on the go, in only 5 minutes. The project is capable of reading all the headlines of the news articles and may open the source article for more in-depth reading if required by the user. This project helps many people to stay updated and refreshes while utilizing as less time as could be expected. Users get educated and be well proficient with the events that are occurring round the globe in a very simple and intriguing manner.

Individuals with restricted time currently can undoubtedly get up to date just with the help of voice assistance. This project helps people suffering with visual impairment and locomotor disabilities by empowering them to be up to date with the events happening in the world irrespective of their medical condition. We thus conclude our research with successful completion of the project. It also helps physically challenged people to make use of the latest advancements in the technical fields and enables them to stay updated and informed without their health condition hampering them.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 6, May 2023

The system also enables user to listen to the articles that grab our interests and those that it thinks that are important for the wire to know. The proposed system is a fine example of how one of the most sought-after features of the modern device can make our lives much easier and help us save both time and the physical work to stay informed.

REFERENCES

[1] M. Gautam Reddy, K. Lalitha, G.D.S.R. Abhishek, A. Parameswar Rao, Mr.Viswanath G, "An interactive voice-controlled application integral ted with artificial intelligence using Alan studio", international journal of creative research thoughts (IJCRT) volume 10, Issue 8 August 2022.

[2] Jaya Vel Rajan M1, Akash C2, Senthil Kumar S R3, Reena R4, "Speech-Driven Web News Application using Artificial Intelligence", International Journal of Advanced Research in Science, Communication and Technology (IJARSCT), Volume 2, Issue 6, June 2022.

[3] Devashish Ashok Pathrabe, Aboli Anil Gosavi, Yogesh Kumar "Conversational Voice Controlled News Application", International Research Journal of engineering and Technology (IRJET) Volume: 09 Issue: 06 Jun 2022.

[4] Mohammed Nomaan1, Dr Bhuvana J "News App using AI based Voice Assistant", International Journal of Research Publication and Reviews Vol 3, no 4, pp 170-171, April 2022.

[5] AmoghBorgave, Vignesh Sura, Vignesh Sura, Yash Patil, Prof. Govind Pole, "Review Of Conversational Voice Controlled React News App using Alan AI", Journal of emerging technologies and Innovative research (JETIR) © 2022 JETIR March 2022, Volume 9, Issue 3.

[6] G. Terzopoulos and M. Satratzemi, "Voice Assistants and Smart Speakers in Everyday Life and in Education Informatics Educ., vol. 19, no. 3, pp. 473-490, 2020, DOI: 10.15388/infedu 2020.21.

[7] J Gnanamanickam, Y. Natarajan, and K. R. Sri Preethaa, "A hybrid speech enhancement algorithm for voice assistance application, Sensors, vol. 21, no. 21, Nov. 2021, DOI: 10.3390/521217025.

[8] AadityaChaprana, Ranjeet Kumar, PhD, Ajay Saini, Akash Kumar, "Voice Controlled News Web Application with Speech Recognition using Alan Studio", International Journal of Computer Applications (0975 – 8887) Volume 183 – No. 2, May 2021.

[9] Sameer Mahajan, Nahush Kulkarni "A Conversational News Application Project using Artificial Intelligence based Voice Assistance", International Research Journal of Engineering and Technology (IRJET) Volume: 07 Issue: 09 September 2020.

[10] R. Dale, "Voice assistance in 2019" Nat. Lang. Eng., vol. 26, no. 1, pp. 129-136 Jan, 2020, DOI: 10.1017/S1351324919000640.