AI Assisted News Reader - ALAN

Abstract

This project aims to increase the accessibility of news to readers, this is achieved in a couple different ways, first by fetching the news by different categories, sources, regions, specific terms etc. and secondly, by making the experience of reading news interactive and fun, using techniques of conversational AI. Designing an AI assistant that can act as a reading buddy for the user. The AI can read news to the user, fetch news in the described ways and interact with the user in a human-like manner. This will also reduce the screen time of the user. Later on News Filter can be added to the application to make the process of getting news more comforting and relaxing rather depressing and anxiety inducing.

Overview

Broader Goal

In recent times we have seen a lot of negative impacts that news has on people and especially youth. Studies have shown that news can cause significant mood changes, generating anxiety and depression that subsequently exacerbate the individuals own personal worries and anxieties (source). This application aims to tackle this problem with the help of AI. The AI will act like a reading buddy and will present the news in a non-sensational manner, thus making it less depressing.

Problems - At hand currently

1. **Creating an interactive UI** - The Frontend of the application is built using ReactJS and UI is powered by Material UI and CSS.
2. **Writing Backend API (Script) for the AI Assistant** - The AI interface is built using Alan AI service, which is a conversational AI tool to integrate multi-modal voice assistant in applications.

Design Architecture of the Application

> The Architecture of the application looks something like this :
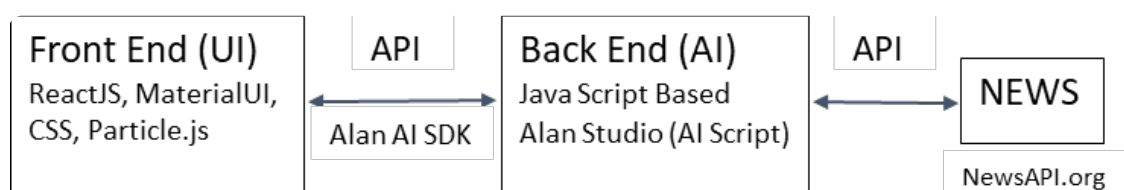
User experience

1. **Button**: The AI Assistant can be accessed with the simple click of a button, which is available on every screen.
2. **Read News**: The AI Assistant can be asked to read the news to the user - touch free experience, reducing screen time and eye strain while reading news.
3. **Conversational AI**: Friendly Human Computer Interface.

The landing page of the application will have helper cards to guide users as to how to use the App, the users may also ask the AI assistant to describe what the app does.

Upon receiving a request to fetch particular news items, the AI will fetch them by making an API call to the newsapi.org, which is one of the standard and reliable APIs to get latest news. The AI is designed to make requests to accurate endpoints of the news API, by understanding the intent of the user/speaker.

After the news has been fetched, the application will render a screen with news cards to display the fetched news. The AI will ask the user if they want the news to be read, in case the user says 'yes', the AI starts reading the news headlines sequentially. Also while reading the AI assistant should scroll the screen for the users to see the card which it is reading to give an immersive experience to the users, in case they are reading along. The user can choose to read the news instead by negatively answering the question.

The news items (card) are also numerically indexed, so the user can just ask the AI to read a particular news item (Addressed with its index number, which is written on the bottom right corner of the news card).

The AI assistant should also be able to hold general conversations with users.

Why AI functionality on backend ?

It is always better to use the main trained AI model on the backend because usually AI models (ML models) are quite big in size and are very memory intensive. They are not meant to be run on average client's (user) personal computer or mobile phone. Thus a trained and responsive AI model is uploaded to a cloud with optimal resources and dedicated processor and graphics if required and an API is built to interact with it, so that all the processing is done on the backend without overloading the user's device. Besides the UI/UX is a lot smoother when AI functionality is at the Backend. This method is a lot faster and it reduces the data consumption and package size of the application that is delivered to the user to interact with. If we package the AI functionality with the front end then it would lag the user's system and will discourage user to use our application again.

Future Scope - Not currently implemented

1. Custom make news filter for re-phrasing news in a less-violent, non-traumatic and non-depressing format.
2. Enhancing the chat capabilities of AI Assistant to hold regular (day-to-day) conversations and news related conversations as well.
3. Adding more categories, terms, regions and scopes to fetch news. Making the process more immersive and responsive.

The idea is to make news an interactive and relaxing listening experience rather than a plain boring reading experience.