IJFANS INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES
ISSN PRINT 2319 1775 Online 2320 7876
 Journal Volume 13, Iss 04, 2024

MULTIPLE LANGUAGE TRANSLATION USING NEURAL MACHINE TRANSLATION

Dr. V. Ramdas[1],A.Bala Abhineya[2], M.Srivalli[3], S.Vishal[4], P.Shiva Ganesh[5], MD.Zahed[6] , Dr. V. Venkateshwarlu[7].

[1,7]Associate Professor, Department of CSE, Balaji Institute of Technology and Science, Laknepally, Warangal, India

[2,3,4,5,6] B.Tech Student, Department of CSE, Balaji Institute of Technology and Science, Laknepally, Warangal, India

Abstract :

A multiple language translation is a web application that can be utilized for translating from one language to another. The study develops anlanguage converter in order to make learning and language translation easy and facilitates stress-free communication. The system will also be able to evaluate language translation to determine their suitability for everyday conversation. In modern times, language interpreters must understand and speak both the language been translated to and verse-visa. This traditional approach used for solving the problem of language differences has not been productive and favourable. Therefore, the study develops an language converter website inorder to make learning and language translation easy and stress-free communication. The proposed language translation uses Google's real-time translation API natural language processing with Java programming language to develop the application. The most used languages in India (i.e., English, Hindi, Telugu, Kannada, Malayalam etc.,) were used for the translation. This application can be useful for Tourists for communication purposes, thus allowing them to integrate with the local people and access the right information.

I. INTRODUCTION

In communication, language has been a significant barrier for centuries now, and human beings have always tried to provide a solution to the issues of language translation.

Over the decade's humans have developed different ways of translating languages in other to solve the problems associated with language differences.

Real time world contains different significant messages, labels and useful information but most of them are written in different official languages which depend on the host country.

Besides that, it is inconvenient for a traveler to carry on their tasks in a foreign country if they don’t understand the language used in that country.

They need to carry a pocket dictionary or use an online translation service in order to understand the message. Optical character recognition (OCR) has been introduced to simplify the digitization process for users. However, OCR is not able to translate scanned text images into different human readable languages.

Therefore, this paper proposed an Web-based application programming interface (API) developed using Firebase as an improvement text recognition program that is able to translate the audio into language of user preference.

This proposed API detects text from the audio, and translates the audio into user-preferred languages.

This paper provides the analytical study of existing multilanguage translators. Section II gives an overview of Machine Translation(MT) approaches along with developments. The application leverages Google Translate API for automatic language detection and translation, providing seamless and real-time translation capabilities.

With a clean and responsive design, the application offers a variety of features. Users can type or paste text into a text area, select the target language, and get an instant translation. The app also supports speech recognition, allowing users to dictate text and have it automatically converted into text for translation. This is useful for hands-free translation and quick input. Users can translate text into several popular languages, such as Telugu, Hindi, Tamil, Malayalam, Kannada, and English.

The translation result is instantly displayed after the user clicks the translate button, providing the translated text and the detected language of the input text. The design is optimized for both desktop and mobile devices, ensuring a consistent experience across different screen sizes. The sleek and minimalistic interface with interactive elements, such as buttons and drop-down menus, enhances usability while keeping the focus on functionality.

This web app is ideal for anyone who needs quick translation services for daily communication, language learning, or content creation, making it a versatile tool for various users.

II. LITERATURE SURVEY

Recent study tells that, today's the ability to communicate across languages is more important than ever. Multiple Language Translator, which uses technologies like machine translation(MT),automatic speech recognition(ASR) and neural machine translation(NMT) have revolutionized the way we interact with each other. Previous Language translators have developed but some are the main reasons to use this Machine Language Translator is that they are Limited Flexibility, High Maintenance, Quality issues, Noisy Environment etc., This Machine Language Translator overcome these problems with the collaboration with Google Translator API, which is more Flexible to use, user friendly, zero cost and Real time performance which can we easily accessible by everyone through out the world. This will help the migrants and tourists to easily sustain the life at various places.

III. MACHINE TRANSLATION

Machine Translators are developed by number of developers across the world. Different approaches are used to develop the translation. Fig 1 shows the different approaches commonly used

ISSN PRINT 2319 1775 Online 2320 7876
 Journal Volume 13, Iss 04, 2024

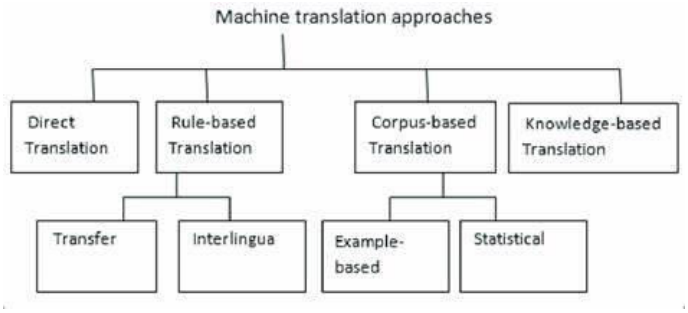


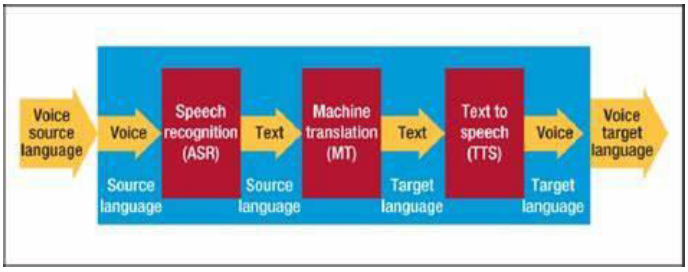
Fig 1 Machine Translation Approaches

There are various developed models used these approaches. The below table shows some of the examples for MT systems

S.No.	MT system	Approaches used
1	Anglabharti	Interlingula
2	Anusaaraka	Hybrid
3	Mnatra	Transfer Based
4	Sampark	Statistical
5	Google Translate	Statistical

- Multiple Language Translator.

Multiple Language Translator is a translator which translates the text by using *googletrans* module in python, Which provides an interface to the Google Translate API. *googletrans*is a python library, it allows the developers tointegrate the translation capabilities to their applicationmaking it easier to translate. It also provides Auto Language Detection of the source text which is useful in speech to text. For translation it uses Neural Machine Translation(NMT)models.These are the trained models which provide accurate translations. This System uses large neural networks to translate entire sentence at a time rather than piece by piece.



IV. PROPOSED METHODOLOGY

The proposed language translator system facilitatesseamless multilingual translation using the googletrans library and Google Translator API. It accepts textual input via a user interface, allowing users to specify source and target languages or rely on automatic language detection. Input text undergoes preprocessing to remove unnecessary characters and ensure

compatibility with the API. The googletrans library then interacts with Google's servers for real-time translation, using ISO 639-1 codes for language pair mapping. The translated output is formatted to retain the original structure and is displayed to the user, with error handling mechanisms providing feedback for issues such as unsupported languages or network failures.

Transformer Networks :

The Google Translate API relies on the Transformer architecture, which is the foundation for modern machine translation systems. Transformers use self-attention and multi-head attention mechanisms to handle contextual relationships in text, making them ideal for translating between languages.

V. PROBLEM STATEMENT

To develop an web application for language translation that facilitates the usertounderstand unknown languages.

A. Features of Proposed System

In the proposed system where we will be implementing translation with all the functionalities like speech recognition and translates the text and includes the languages which are popular in our country as well as popular all over India. The advantage of this application is it doesn't require internet connectivity.

B. Objectives

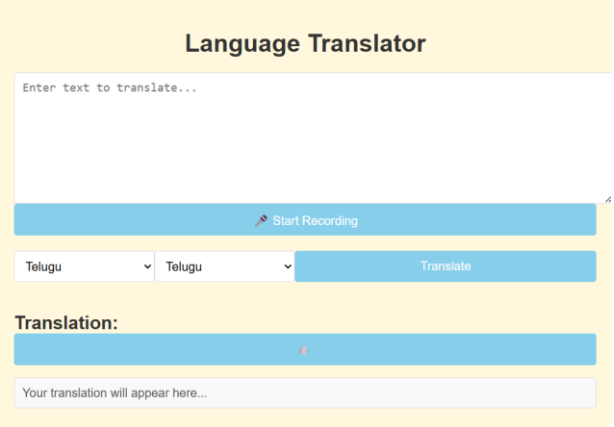
To develop the language translator in order to understand unknown languages

To convert voice to text, translating to user specific language.

User specific language as input text and translate to user interested language that support firebase

VI. RESULT ANALYSIS

Due to increase of global need for communication, the translation is becoming more important The translation process, the translator has to read the text thoroughly. During the process of understanding the source text, the translator first identifies the meanings of words and their relation between first in sentences, then in paragraphs and individual parts of the text and finally throughout the entire text . the translator then links this knowledge with the real-life situation that the text in reflects, and which includes the author of the source and the target recipient. The translator's intuition also plays an important role in the translation, as the understanding of the text is partly conscious and to some extent a subconscious process., but they are more expensive to train. If we consider an translator which is easy to use and have user friendly experience which can be easy to use by the people across the world, this will decrease the training time to the people.



VII.CONCLUSION

In conclusion, I think that translation is necessary, or rather, indispensable, to communicate and bring a concept closer to people who belong to different cultural realities.an important element for me is taking into account that every communicative act has a communicative residue; a concept, word or expression that seems to make our translation come to a standstill and to make it impossible to continue. So it is essential to have the ability or skill to see which parts of the message could be misunderstood and which tools could be used to compensate for this residue

Attention must then be paid to the reader and the context ; because every discourse we make, written or oral, is influenced by its cultural context. It is as thought there were a border that united two cultures and separated them at the same time, making the differences clear. For me it is here, on this border, where translation takes

VIII. REFERENCES

[1] Akshar Bharti, Chaitanya Vineet, Amba P. Kulkarni & Rajiv Sangal, ”ANUSAARAKA: Machine Translation in stages’, Vivek, a quarterly in Artificial Intelligence, 1997Vol. 10, No. 3, NCST Mumbai, pp. 22-25

[2] Akshar Bharti, Chaitanya Vineet, Amba P. Kulkarni & Rajiv Sangal, ”ANUSAARAKA: overcoming the language barrier in India”, 2001, published in Anuvad: approaches to Translation

[3] John Hutchins, “Current commercial machine translation systems and computer-based translation tools: system types and their uses”, International Journal of Translation, 2005,vol.17, no.1-2, pp.5-38

[4] Latha R. Nair & David Peter S., “Machine Translation Systems for Indian Languages”, International Journal of Computer Applications (0975 – 8887), 2012, Volume 39– No.1

[5] Sampark: Machine Translation System among Indian languages http://tdil-

dc.in/index.php?option=com_vertical&parentid=74, http://sampark.iiit.ac.i

BIBILOGRAPHY :

I'm A.Abhinaya. I am currently in my 7th semester of Computer Science in the Bachelor's Degree at Balaji Institute of Technology and Science. My research interest is done based on **"Multiple Language Translation Neural Machine Translation"**

I'mM.Srivalli. I am currently in my 7th semester of Computer Science in the Bachelor's Degree at Balaji Institute of Technology and Science. My research interest is done based on **"Multiple Language Translation Using Googletrans"**

I'm P.Shiva Ganesh. I am currently in my 7th semester of Computer Science in the Bachelor's Degree at Balaji Institute of Technology and Science. My research interest is done based on **"MultipleLanguage Translation Using Googletrans"**

I'm S.Vishal. I am currently in my 7th semester of Computer Science in the Bachelor's Degree at Balaji Institute of Technology and Science. My research interest is done based on **"Multiple Language Translation Using Googletrans"**