

A Review on Smart Communication: Real-time Accent Translation

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Abstract: *In this survey paper, smart communication has been talked about. smart communication turns into the hot research regions in nowadays. The different calculations and algorithms have been talked about in this paper which is utilized for speech recognition and real-time accent interpretation. Likewise, its need has been talked about. Further, it is observed that as this is significant issue to consider yet at the same time improvement is required.*

Keywords: Accent, Translator, Software, Smart Communication

I. Introduction

Communication turns into the essential requirement for the presence and endurance of people just as to an association. It is the way toward making and sharing thoughts among the individuals to arrive at a typical comprehension. It is the process of creating and sharing ideas among the people to reach a common understanding. Language plays a key role in the communication rather than the signs or actions. Probably there are roughly 6500 languages in the world. But when it comes to India, there is much difference in the census, not only in India but in many countries it has been seen that most of people are not interested in speaking their native language but they are curious to learn new language other than that. Even some religious books are translated into many different languages [1]. In India, there are 121 languages which are spoken by people. However 96.71 % of the population in the country who have one of 22 scheduled language as their mother tongues. The Eighth schedule of the constitution of India consists 22 languages out of which few are named as following: Urdu, Hindi, Punjabi, Kannada, and Telugu etc [2]. After communication, next focus should be on the 'Translation' which refers to the process of translating from one language to another. For the better communication, people are becoming more curious to know different languages but it almost impossible to learn all the languages existed over world. Hence, there is need of device which can work as a translator for translating the languages for the smart communication.

II. Revolution in Translation

Recognizable proof of non-local person is a basic snippet of data for settling on pivotal on-the-spot choices for security purposes. Distinguishing proof of a non-local speaker is regularly promptly evident in ordinary discussion with a local speaker through discourse substance and emphasize. Such recognizable proof which requires nature with language subtleties may not be workable for a non-local examiner or insight expert or when speaking or tuning in through a machine language interpreter.[3] Therefore, with the change in the world, there is revolution in the communication system also. Many companies or organizations are occurring with the need of

translator for smart communication, hence, there developing various software which can help for the same issue. In addition to this, people seek to travel all around the world to explore. When employees visit other countries, they may also face language issues. Hence, it becomes necessary to have a device or software which can translate the language on that time for better communication.

III. Literature

Bozhao Tan and others have researched the issue of non-local identification in the speech, utilizing two huge databases that have completed the sub-frameworks arrangement to extricate emphasized phonetic marks utilizing HMM, GMM, and discriminative preparing. Also, they have set-up the framework combination structure for non-local speaker recognizable proof. They concluded that the results from the framework combination demonstrated a considerable improvement in results for any individual model for content free cases [3]. The researchers discovered NTD-TTS system which will interpret the CTD content information and integrate the NTD discourse and give as output. The NTD-G2P was actualized by utilizing the rule based and word reference based methodologies [4]. The authors used EM algorithm whose perception vector comprises of the unearthly parameter vector and its dynamic element vectors. They have concluded that it emphasizes the forward-in reverse calculation and the parameter age calculation for the situation where state arrangement is given [5]. The researchers discussed PRAAT as an impressive research which is a PC program for dissecting, incorporating, and controlling the speech. They have also shown the instrument for phonetics. But they have observed that it is not done equity and concluded that PRAAT is unparalleled as a broadly useful speech investigation tool [6]. To evaluate the acknowledgment exactness for the assorted provincial has worked to get phrases around 1500 which were given through speakers selected to mirror statistic discourse examples of the staff who might be utilizing the gadget operationally. In further analysis, they have chosen an extremely little example of expressions from this bigger arrangement of expressions to gauge the hearty impacts of natural clamor and speaker gender. Also, they have investigated the negative effect of ecological commotion in our examinations can be moderated by utilizing a nearby talking receiver with the gadgets. In addition to this, they have concluded that the two gadgets perceived female discourse more ineffectively than male discourse [7].

IV. Discussion of Issues

When it comes to the offline live translation between two nations higher authorities, in UNESCO and UNO meetings, are independent of these gadgets. They will be separately having their own interpreters who will be translating them exact things, because gadgets can be hacked and it belongs to the nations issue. When it comes to the working the gadget will be having a recorder which will be recording the language which records and it will translate it into the corresponding language in which it will be commanding. But as it observed there is the issue of framing Telugu to Punjabi. Whether the gadget is directly converting the Telugu to Punjabi or is it indirectly taking help of any major language like English and then converting it into the Punjabi language. This is due to the fact that meaning of words differs with single letters with its accent. So to be precise, the recorder should capable of recording any slight voice changeover of the person and it should have the details of each and every meaning of a certain language and it should be capable of warning the customer if he is saying any vulgar or inappropriate words to the situation. Depending upon the type of gadget, whether it is converting directly or indirectly with help of using any language for an example English, it should perfectly translate the wordings in ideal case.

V. Requirements

For designing the best translator device the following qualities it must have in ideal case:

1. Collecting raw data of various languages and accents.
2. A high quality recorder and receiver.
3. It should be capable of predicting some unwanted words and it should warn the customers.
4. A safety mode should be there.
5. It is a gadget working on internet so it must be hack proof.

VI. Working

While considering a particular country, it will be having many states divided in it and each state will be having its own native language. A region will be having many languages and in the particular language it will be having different accents. Also, in those accents people may have the peculiar way of speaking.

Communication also matters with the speed and/or the way of speaking. Recorder should be perfect in collecting the above information. While considering the output it should provide the output in the desired accent of the customer. And when collecting the information it should collect it as audio samples and separate it on the basis of their accents and the time of speaking. When the user inputs the corresponding language which will be identified by the language translator gadget based upon the accents, time and/or way of speaking. Therefore, it will recognize the language and accent as its 50% work. The same can be understood with the help of block diagram shown in Fig.1.

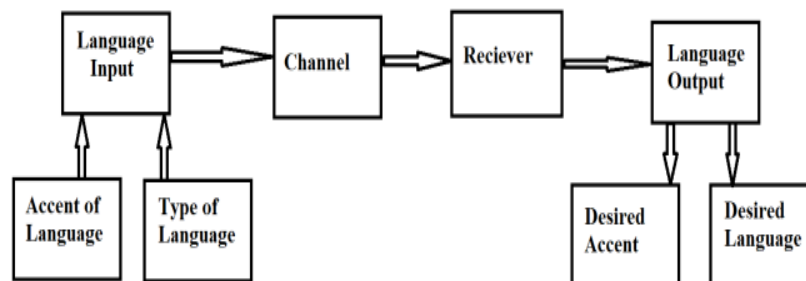


Fig. 1 Block diagram of Accent Translator

The next step will be delivering accent as same as possible as output. In addition to this, the way of speaking also refers to the exact meaning in another language which is such a difficult task. This is due the fact that for the same, there is a requirement to collect the raw data of language information from its roots to the stem.

Having this data means its 95% job has been done. Hence, 5% work will go to the internet and its working on internal software. It can be made offline by providing regular updates to the customers.

Conclusion

In conclusion of this review paper, we can say that smart communication has varies benefits. With time to time, various algorithms and methods are used for the real time accent translator.

But it has some drawbacks also which can be taken as areas of development. Artificial intelligence didn't reached as expected due to the device like this may be hacked. Security becomes the main issue while implementing these devices. Hence, it is one of the major areas of improvement.

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