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Effective Recognition of Different Accents of Kannada Using KNN

Mohan Kumar K [#1] and Dr.S.R.Swamy [*2]

[#] *M.Tech – Scholar Dept. of Computer Science and Engineering,R.V.College of Engineering, Bangalore, India*

[*] *Professor,Dept. of Computer Science and Engineering,R.V.College of Engineering,,Bangalore, India*

***Abstract*— Speech Recognition applications are getting to be normal and helpful in nowadays and age, the same number of the cutting edge gadgets is composed and delivered easy to use for the comfort of overall population. Speaking/communicating directly with the machine to accomplish wanted goals make use of present day gadgets less demanding and advantageous. Although many interactive software applications are available, the uses of these applications are limited due to language barriers Albeit numerous intelligent programming applications are accessible, the employments of these applications are restricted because of dialect hindrances. Thus improvement of speech acknowledgment frameworks in neighborhood dialects will help anybody to make utilization of this mechanical headway. In India, speech acknowledgment frameworks have been created for some indigenous dialects. In this paper , we show the study of real research works in the improvement of programmed speech acknowledgment in Indian dialect.**

***Index Terms*— Indian Speech recognition, KNN Classifier**

I. INTRODUCTION

Natural Language Processing (NLP) is a territory under manmade brainpower expected to acknowledge process and control the human dialect. In this procedure the scientific, computational and phonetic learning must be coordinated to build up an application, which fills in as a guide to people in enhancing their undertaking of seeing their everyday data. NLP is utilized as a part of Speech, Text, Sentiment Analysis and different applications. Utilization of Machine Learning Algorithm on documented normal dialect information, for example, mono-lingual, bi-lingual content and speech corpus gains the strategies to process the common dialect. Handling a characteristic dialect includes distinguishing a given dialect text style, word, state or a sentence. This assignment opens a wide road of research to carryout in creating dialect handling devices, for example, lexicons, wordnet, parts of speech taggers, morphological analyzers, machine interpretation frameworks and programmed speech recognizers. Speech processing is one of the application territories of NLP, which includes encoding and disentangling the sound signs articulated by individual to deliver a letter, a word and a sentence.

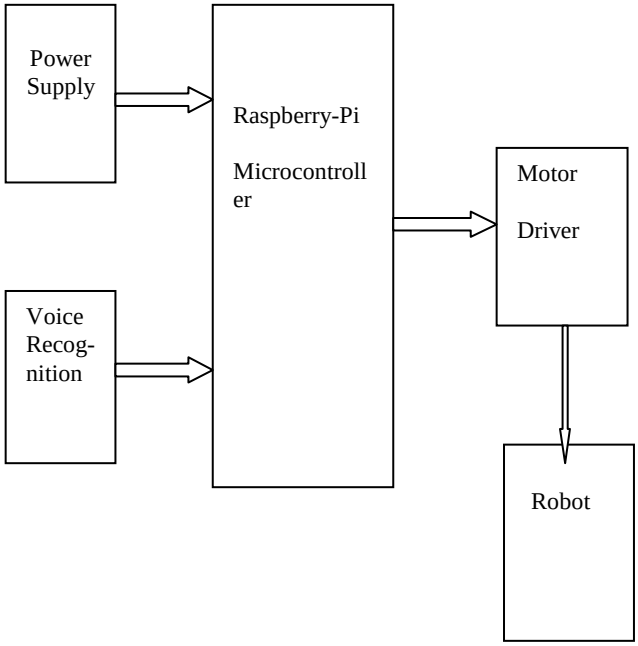
Automatic Speech Recognition (ASR) frameworks that perceive local speech that have achieved certain development. In any case, the acknowledgment of local speech with highlight varieties is as yet an issue. Regularly, speech acknowledgment framework execution corrupts definitely if an acknowledgment framework is presented to highlighted speech. Highlighted speech is regularly experienced and it ought not be dismissed in speech acknowledgment frameworks. In this proposed work we exhibit our discoveries in handling an Indian language Kannada being talked in the state Karnataka and build up a Kannada Language acoustic model utilizing Sphinx speech acknowledgment framework.

II. EXISTING METHOD:

In India, the early work on large vocabulary speech recognition started with Hindi language around late 90's. Samudravijaya proposed a speech recognition system for Hindi which follows a hierarchical approach to speech recognition. Kumar proposed a method large vocabulary continuous speech recognition system for Hindi based on IBM via Voice speech recognizer with help of HMM(Hidden Markov Model). Based on this model the accuracy of the recognition is fall down to 60% where its not able to recognizing the data with acoustics.

III. PROPOSED ARCHITECTURE:

The main objective of this paper is to create a system where it can able to recognize the different accents of Kannada using KNN. This system mainly consists of Raspberry pi microcontroller, Mic, voice recognition , Along with robot. Now the system will collects the speech as Kannada from the mic and given to the raspberry pi and will performs the action and presenting on the robot like(Mundhe Hogu,Hindhe Hogu,Bala,Yada,Nillu)



IV. METHODOLOGY:

Since Kannada is spoken by a large number of people in vast areas, it has several accents/dialects, namely

Northern Kannada
Southern Kannada
Coastal Kannada

Northern, Southern and Coastal Kannada has a few one of kind eccentricities. These quirks are principally due to the social, land and phonetic varia-tions. Northern Kannada is talked by Hubli and Bagalakot regions. Mysore area Kannada is among the Southern Kannada lingos with a few peculiari-ties. Beach front Kannada is talked by Udupi and South Canara districts.Figure demonstrates the three highlight/tongue locales. The topographical separation between these districts is roughly 300 Kms. Subsequently, the odds of watching blen ded highlight in these districts is low.

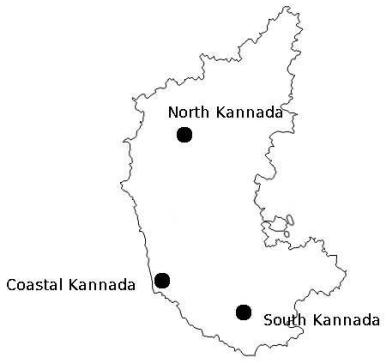


Figure: Different accents of Karnataka

A language model describes the rules of constructing sentences in a language using KNN. It is very useful in speech recognition systems to improve the speech recognition accuracy. Language models help a speech recognizer figure out how likely a word sequence is independent of the acoustics..

A Kannada speech recognizer was built using the clean speech corpus. This clean speech recognizer is used throughout the experiments in this research for analyzing and comparison of performance with accent de- pendent speech recognizers. In this section, we introduce the various evaluation methodologies and accent independent Kannada speech recognition system Since the recognition task is continuous speech, where the number of words in a utterance is not known, not only the misclassified words, but also extra words (insertions) or missing words (deletions) are a source of error. A recognition hypothesis is aligned against a correct transcription using dynamic programming to minimize the number of misclassified words.

V. CONCLUSION

It is a push to have a human PC exchange framework in any neighborhood dialect. We portray our experience to make and create Kannada Language acoustic model utilizing Sphinx speech acknowledgment framework. This measures the precision of speech to content transformation framework upto 75-83%. This speech controlled wheelchair will help for the physically debilitated people. This application will be helpful for the remote individuals who don't have a clue about any language other than Kannada. This application can likewise be helpful for the imbecilic and hard of hearing individuals to speak with others.

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Mohan Kumar K studied B.E(CSE) in New Horizon College of Engineering and currently pursuing M.Tech (CSE) from R.V.College of Engineering, Bangalore.

Dr.S.R.Swamy is Professor at RVCE Bangalore. He completed his Ph.D and having 34 years of teaching experience. His area of Interest is Geometric Function Theory & Fuzzy Logic