

Marathi Speech Signal Generation using Matlab

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Abstract- A Text to Speech synthesizer is a computer based system that should be able to read any text. Optical character recognition system simply concatenates isolated words. This is applicable for any modern infrastructure. as is case for the announcement of any information. In the TTS it is impossible to record the data. And we use the grapheme-to-phoneme transcription. This system is simply concatenate the human voice system. In this paper, we implemented natural prosody generation in TTS for Marathi Speech Signal.

Index Terms - OCR System; grapheme-to-phoneme; Unicode; Enevelop detection.

I. INTRODUCTION

For any express the language we required the setof signs, alphabets, and graphical gesture musical information. When any communication is taken place then in oldest the so many different patterns is used. In modernization we required the all information in standard format. The people should study extensively. All information is most of the form in digital format. so the digital content can reach to the masses and facilitate the exchange of information around the people speaking different languages. The main feature of TTS is the intelligibility and naturalness, which means that the output sound that is generated at the end of the process should be easily understood and at the same time it should sound natural

II. TTS SYNTHESIS FOR MARATHI LANGUAGE

The Marathi script uses Devanagari script. This script contains a set of 12 vowels and 36 consonant, which are known as consonant and vowels respectively in

the language. It also contains dependent vowels, which are known as matra. All the vowels, consonants and dependent vowels have been stored in the database in the form of ASCII values with their English transliteration code. This is because Matlab® being Unicode software, it first converts Marathi text to its equivalent English

2.1 Selection Of Unit For Concatenate Synthesis

Among all the synthesis techniques that have been studied, it has been observed that the output of unit selection synthesis has higher naturalness and intelligibility. The selection of unit is very important. Different units for selection that are used are diphone, phoneme, syllable, words or even sentences. Creation of database for all the words or sentences / phrases is a very challenging task as it requires huge memory, however the quality of output sound by this method will be much closer to natural and intelligible output as it will have less break points. While using diphone or phoneme as a unit of selection the memory requires less space but requires more audio processing as it contains higher number of break points. The quality of output sound will have comparatively a lower effective naturalness and intelligibility. Therefore selection of syllable as unit of selection results in a situation of tradeoff between memory and quality of output. Based on this in this proposed system we have used syllable based speech synthesis

2.2 Creation Of Database

The proposed system required two database, which are as follows.

2.2.1 Audio Database

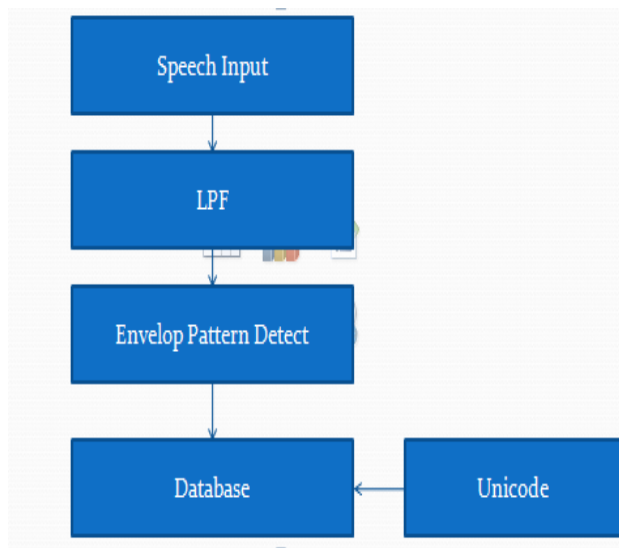
An Audio database, that is created contains prerecorded sound of all the “Barakhadi” (Barakhadi is the phonetic chart that enables one to recognize “akshar” (letters) and matra (vowel sounds) used Marathi language. All sounds can be recorded into single audio file later it can cut down into multiple

2.2.2 Text Database

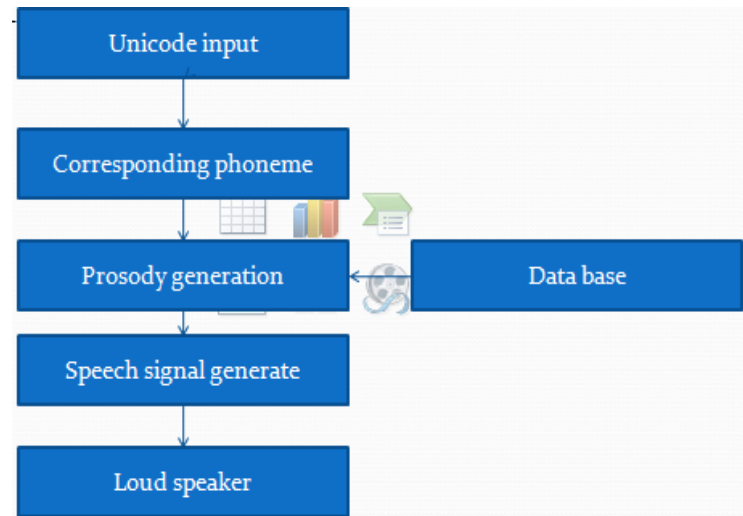
The text database contains words, the ASCII values of Consonant and vowels are stored in text database also English transliteration of Marathi is also stored in text database.

III. PROCESS FLOW OF PROPOSED SYSTEM

In this system we give the speech input which is in prerecorded format then this is pass through LPF which design for range of frequency. then that filter passes only that low range of frequency. then envelop of that output is form. from that envelop pattern generation technique is used for speech signal output. that pattern output gives to database that database compare with entering Unicode this is part I of signal generation. In second part that Unicode input matches with corresponding phoneme. and finally speech signal will generate.



I Part

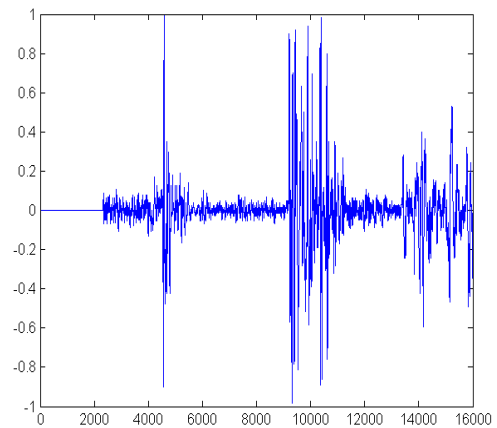


II Part

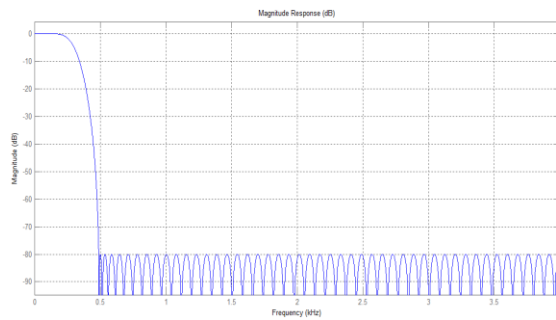
Fig 1: Block Diagram for proposed system

IV.RESULT

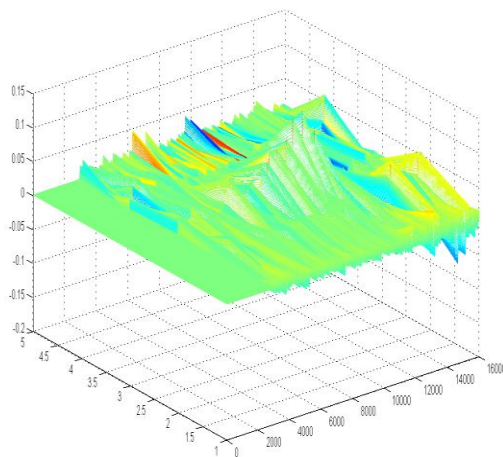
1) Are waa(Explementary sentence)



2) Magnitude Response of signal



3) 3-D graph of Are waa



V.CONCLUSION

In this paper we found that by creating different database of Marathi barakhadi and consonant and vowels. By prerecording of speech and then compare with Unicode we get final o/p of speech in the form of graph. then this o/p extracting the noise and adding prosody at final stage we get natural sound.

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