

## Text To Pho Algorithm For Telugu

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### Abstract

The purpose of this paper is to design and create TtS algorithm. TtS algorithm is the part of My research work to design and implement Emotional Speech Synthesis system for Telugu(ESST) . In this paper we focused on the above issue. Finally TtS algorithm is designed and successfully implemented in our system ESST.

**Key words** ESST, TtS, algorithm , telugu, text to pho

### 1. Introduction

The primary task of this paper is to design and implement the TtS algorithm. There are three subtasks to this major task. First sub task is to record the voice, second sub task is to find the pitch and duration of telugu phonemes and third task is to implement out pho file to ESST system.

### 2. Research Background

In first task, the recordings are made at semi-professional recording studio in two sessions. Recordings are made without interruption and maintaining constant pitch. In this study a set of 106 sentences/622 words are recorded to extract the telugu phonemes and diphones. Diphones are used to create Telegu diphone data base. The signals are sampled at 16Khz and quantified 16 bits per sample.

In second task, by using PRAAT tool alphabets are analyzed and found the pitch and duration of phonemes available in telugu language.

In third sub task, output of TtS algorithm is pho file, which is the input to our ESST.

### 3.Telugu phonemes

The following list gives the telugu phonemes

అ	ఆ	ఇ	ఈ	ఉ	ఊ	ఋ	ౠ
a	aa	i	ii	u	uu	r	ru
ఎ	ఏ	ఐ	ఒ	ఓ	ఔ	అం	అః
e	ee	ai	o	oo	au	am	ah
క	ఖ	గ	ఘ	ఙ			
ka	kha	ga	gha	~na			
చ	ఛ	జ	ఝ	ఞ			
ca	cha	ja	jha	~Na			
ట	ఠ	డ	ఢ	ణ			
Ta	Tha	Da	Dha	Na			
త	థ	ద	ధ	న			
ta	tha	da	dha	na			
ప	ఫ	బ	భ	మ			
pa	pha	ba	bha	ma			
య	ర	ల	వ	ళ			
ya	ra	la	va	La			
శ	ష	స	హ	ఱ	క్ష		
Sa	Sha	sa	haa	Ra	kSha		

fig:1 List of phones in Telugu

### 4. Text to pho algorithm

Step 1. Start

Step 2. Read two point variables \*fp and \*fp1 with data type FILE

Step3. Declare variables C, C1, C2, C3, str1 [50]

Step4. fp=tenline.txt

Step5. fp1=samp.txt

Step6. If fp=null

Display file does not exist	k 127 (50,97)
Step7 . else	k 127 (50,97)
Step 7.1. step 7 until c=EOF	a 126 (50,69)
Step 7.2. if c=97	t 125 (50,97)
Strcpy(str1, “26 (50,69)”)	i 130 (50,111)
Step 7.3. else if c=98	y 145 (50,97)
Strcpy(str1 , “30 (50,111)”)	a 126 (50,69)
.....	T 127 (50,91)
Step 7.15 else if c=32	a 126 (50,69)
Strcpy (str1, “ “)	a 126 (50,69)
Step 8. c1 ← c	n 128 (50,93)
Step 9. c2 ← '\n'	i 130 (50,111)
Step 10. Print the c1 char	k 127 (50,97)
Step 11. Print str1(string)	i 130 (50,111)
Step 12. Print cha c2	.....
Step 13. Close fp file	K 127 (50,97)
Step 14. Close fp2 file	A 126 (50,69)
Step 15. Stop	T 125 (50,97)
<b>5. Sample input</b>	t 125 (50,97)
ullipaaya thokka tiyaTaaniki bledu kaavaalaa katthi	h 130 (50,101)
kaavaalaa	i 130 (50,111)
<b>6. Sample output</b>	k 127 (50,97)
<u>L D P f</u>	a 126 (50,69)
u 129 (50,156)	a 126 (50,69)
l 134 (50,99)	v 133 (50,110)
l 134 (50,99)	a 126 (50,69)
i 130 (50,111)	a 126 (50,69)
p 132 (50,101)	l 134 (50,99)
a 126 (50,69)	a 126 (50,69)
a 126 (50,69)	a 126 (50,69)
y 145 (50,97)	here L-phoneme name
a 126 (50,69)	D-duration of phoneme in ms
t 125 (50,97)	P-position of pitch
h 130 (50,101)	f-pitch value at P
o 127 (50,97)	

**7. Conclusion**

Globally our Tts algorithm is useful to convert text to pho for any language. This type of algorithm is first kind of it. Creation of Telugu male diphone database is in process.. Shortly we are going to release the Telugu Male diphone database.

**8. References**

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