Speech Synthesis in Indian Languages and Future Perspectives

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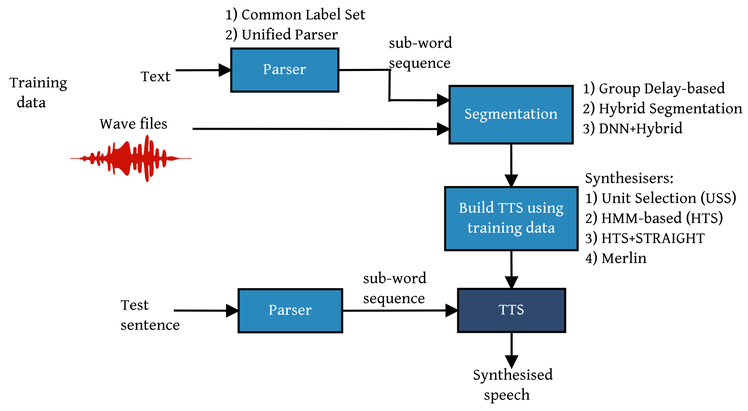
Introduction



- Text to speech synthesis system converts given input text to speech utterance.
- Speech corpus for 13 Indian languages, each containing 40 hours of data(native and English of male and female speakers respectively).
- Unit selection/statistical parametric speech synthesis systems for Indian languages.

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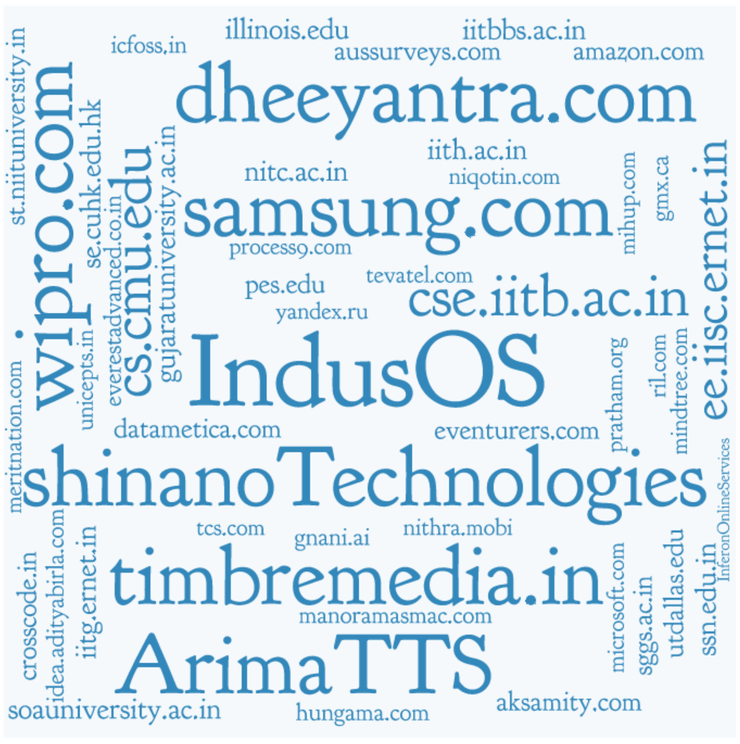
Phase I

- Syllable based unit selection synthesis systems for 6 Indian languages.
- Integration of TTS with ORCA/NVDA.
- Training workshops for visually challenged persons at different places.

Beneficiaries



Future Perspectives

- Prosody based on context.
- Dynamic IVRs.
- Health care, weather reports.
- Google maps enabled with Indic voices.
- Android based applications to aid persons with cerebral palsy, visual impairments.

Phase II

	Label	IPA	Hindi	Marathi	Bengali P	Bengali G	Tamil	Malayalam	Telugu
Vowels	a	a	अ	अ	–	–	அ	അ	అ
	ax	ɔ	–	ऑ	অ	অ	–	–	–
	aa	a:	आ	आ	আ	আ	ஆ	ആ	ఆ
	i	ɪ, i	इ	इ	ই,ঈ	ই	இ	ഇ	ఇ
	ii	i:	ई	ई	–	ঈ	ஈ	ഈ	ఈ
	rq	-	ऋ,ॠ	ऋ,ॠ	ঋ,ৠ	ঋ,ৠ	–	ഋ	ఋ,ౠ
Stop Consonants	c	ʧ	च	च	চ	চ	ச	ച	చ
	ch	ʧʰ	छ	छ	ছ	ছ	–	ഛ	ఛ
	cx	ʄʃ	–	च	–	–	–	–	–
	jx	ʄʒ	–	ज	–	–	–	–	–
Semi-Vowels	y	j	य,य़	य,य़	য়	য	ய	യ	య
	l	l	ल	ल	ল	ল	ல	ല	ల
	lx	ɭ	–	ळ,ऴ	–	–	ள	ള	ళ
	w	ʋ	व	व	–	ওয়	வ	വ	వ
Fricatives	sh	ʃ	श	श	শ,য়	শ	–	ശ	శ
	s	s	स	स	স	স	ஸ	സ	స
	khq	x	ख	ख	–	–	–	–	–
	z	z	ज़	ज़	জ়	–	–	–	–
	f	f	फ़	फ़	–	ফ়	ஃப	–	–

Fig 1: Common Label Set

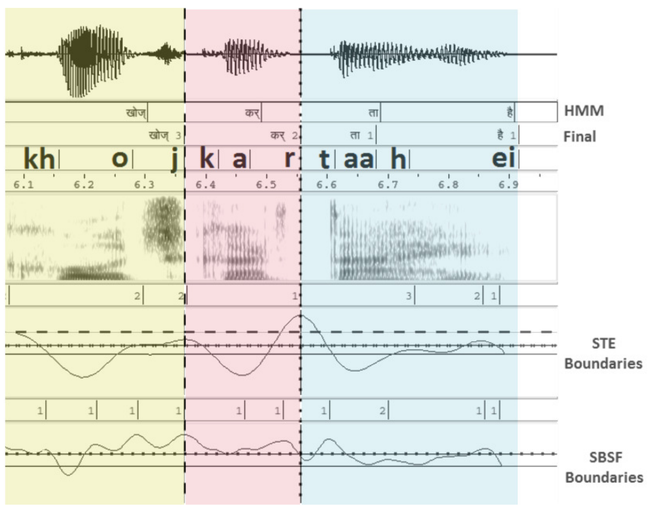


Fig 3: Segmentation

Screenshot 1: IndicTTS Website

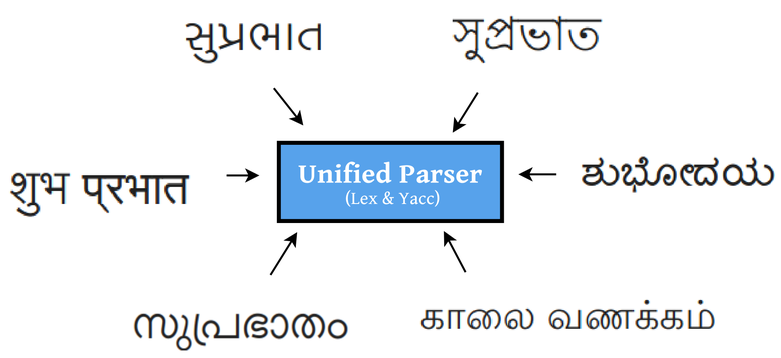


Fig 2: Unified Parser

Fig 4: Android Applications

Download Type	Count
Database	2519
CLS	403
Unified Parser	381
Hybrid Segmentation	263
Pruning	149
Voices	803
Android Applications	576
Synthesis Documents	1470

Screenshot 2: Download Statistics

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