



Coordinators



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Syllabus

References

COURSE OUTLINE

Oral Speech may be the most natural, common and direct mode of human communication. Since the middle of the last century, Speech has become an area of intense and active research and development (R&D) to become a prime means of direct Human-Computer Interactions (HCI). The pace of such R&D has farther got boosted with the general abundance of cheap computing power in the form of PC, PDA or Mobile Handset. While man to machine in speech mode is yet to reach the minimum threshold level for wide spread deployment, spoken messages directly by machine. This need research in speech science and development of speech technology. The course provides the foundation knowledge on speech production and perception along with processing of speech signal in digital domain.

COURSE DETAIL

Modules	Topics
1	Introduction to speech processing, Digitization and Recording of speech signal, Review of Digital Signal Processing Concepts
2	Human Speech production, Acoustic Phonetics and Articulatory Phonetics, Different categories speech sounds and Location of sounds in the acoustic waveform and spectrograms
3	Uniform Tube Modeling of Speech Production, Speech Perception
4	Time Domain Methods in Speech Processing, Analysis and Synthesis of Pole-Zero Speech Models
5	Short-Time Fourier Transform, Analysis:- FT view and Filtering view, Synthesis:-Filter bank summation (FBS) Method and OLA Method
6	Features Extraction, Extraction of Fundamental frequency
7	Speech Prosody, Speech Prosody Modeling (Fujisaki Model)
8	Speech based Applications (TTS, ASR and spoken language acquisition)