SIGMA

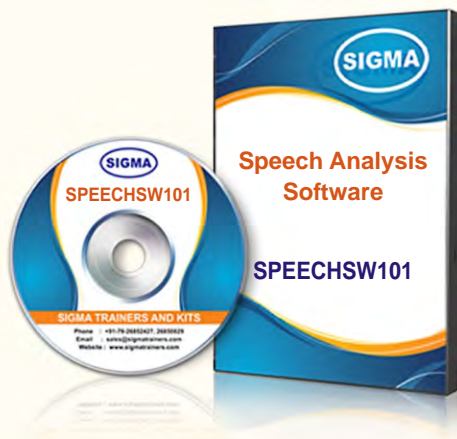# SPEECH ANALYSIS SOFTWARE TRAINER
MODEL - SPEECH101

This Software trainer provides Experimental knowledge of Speech Analysis Software.

Speech Analysis Software

SPEECHSW101

EXPERIMENTS

1. Study of frame format for a .wav file. Record audio signal save as "wav" file format (16 bit, 16 kHz mono format using wave recorder interface (Audacity, Cool Edit Pro etc.). Write a program to read wave file in frame by frame manner and plot the speech segment.

2. Acoustic study of speech sounds using PRATT tool: Record and analyze speech sounds like consonants, vowels, semivowels, diphthongs, nasals, fricatives etc.

3. Classification and voiced and unvoiced part of signal using short time energy and zero crossing rate.

4. Pitch detection using Average Magnitude Difference Function method. Compare pitch with PRAAT pitch contour.

5. Pitch detection using Autocorrelation method. Compare pitch with PRAAT pitch contour.

6. Write a program to compute narrow band and wide band spectrogram and plot 2D and 3D spectrogram.

7. Write a program to draw a Cepstrum of speech segment from the speech utterance.

8. Write a program to find MFCC for a speech segment from the speech utterance.

9. Write a program to find LPC for a speech segment from the speech utterance. Use Levinson Durbin algorithm.

10. Write a program to find first 4 Formants for a speech segment from the speech utterance using a Cepstral domain window.

11. **Books for Speech and Video Processing** : **10 Nos in pdf Format**

12. **Mp4 Video Class for Speech and Video Processing** : **40 Classes in Mp4 on Pen Drive**