Signals and Systems (ECE 209)

Abstract

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Group Number - 21

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Project Title: Lossy Audio compression (Speech)

Description:

In this project we aim to create a Lossy Audio Compression system with good GUI. Lossy methods of compression can provide high degrees of compression and result in smaller compressed files, however some number of the original pixels, sound waves or video frames are removed forever. Speech signals only have a limited range of frequency and humans can only listen in certain range of frequencies. From such speech signal our program will generate a compressed signal whose contents are human understandable. In this project we will be using μ-law encoding approach to perform compression. μ-law encoding is a non-linear companding technique earlier used in telephony system.

Note: Our primary aim is to perform audio compression on some audio signal containing speech, not any audio signal.

Programming Language: Python

User interface:

It will have the option for the user to upload a file. Users will be able to see the graph of input signal and the graph of the compressed signal. Users will have an option to play the audios (compressed and original). Users will have an option to save the compressed audio.

Expected result:

The file of compressed audio signal and the graph of the compressed audio signal.