EE351 - DSP Lab

Project Proposal

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Summary :

In this project we planned to design and implement a Digital Audio Watermarking system.
Digital watermarking is a broad concept which encompasses hiding copyright information in a piece of digital multimedia such that it cannot be detected by the human senses nor can it corrupt the data in which it resides.Here we implementing Digital audio watermarking which involves the concealment of data within a discrete audio file.In audio data, the watermark must be inaudible and also robust against attacks and be statistically undetectable to ensure security and unwanted removal.

Module 1:

In this module we insert a digital watermark into an audio file. This can be divided into four processes:

- Framing : Audio file is portioned into frames.
- Spectral Analysis using FFT .
- Filtering i.e DC removal.
- Watermark signal addition : Embedding watermark signal.

Module 2 :

In this module we do watermark extraction. This can be done in three processes:

- Framing.
- Spectral Analysis using FFT.

- Watermark extraction : Remove embedded data which exists as digital watermarking.

Demonstration of DSP concepts :

- FFT
- Filtering

I/O devices :

- Microphone or some recorded audio signal
- Speaker