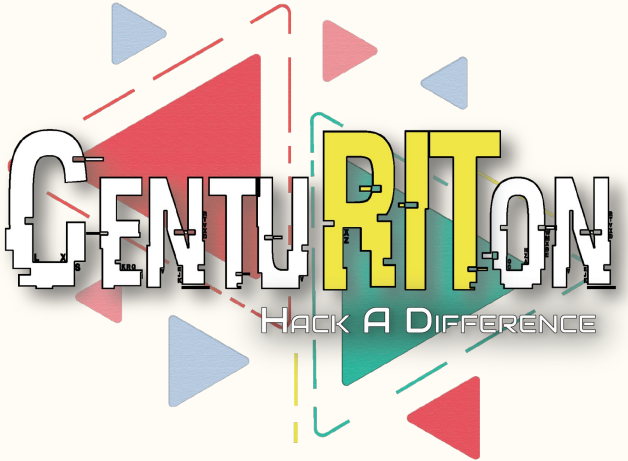
RAMAIAH Institute of Technology

GeeksforGeeks Devfolio polygon MLH MAJOR LEAGUE HACKING

IDEA SUBMISSION TEMPLATE



IDEA OVERVIEW

AUDIO VISUALIZER

AI/ML

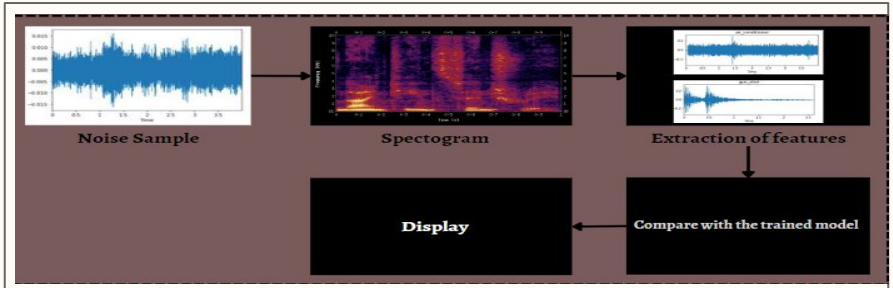
Most deaf-mute people can not lipread and most aren’t suitable for hearing-aids and most of others can not afford.There aren’t many technologies aiming on comforts of disabled yet their necessities alone. For the times like Sound alarms,burglary etc., where such comforts come as life-savers, we aim on building a device for completely aiding deaf-mute

DELIVERABLES

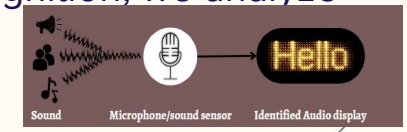
The device’s components include sound sensor and LCD display.Hardware includes microphone and processor boards,vibrating motors. The device is capable of

- Describing and displaying recognized audio from background
- Allowing user to feed different people's voices to identify transcribe to text
- Also recognizing emotion through speech and display it.
- In emergency cases it triggers vibrating motors

METHODOLOGY/APPROACH



Machine learning cannot be applied to sinusoidal waves .So, we convert audio to spectrograms.Then we extract the features from audio using Mel-Frequency Cepstral Coefficients (MFCC) algorithm. This enables the analysis of both the frequency and time characteristics of the provided sound.Using SER/speech emotion recognition, we analyze the mood of speaker

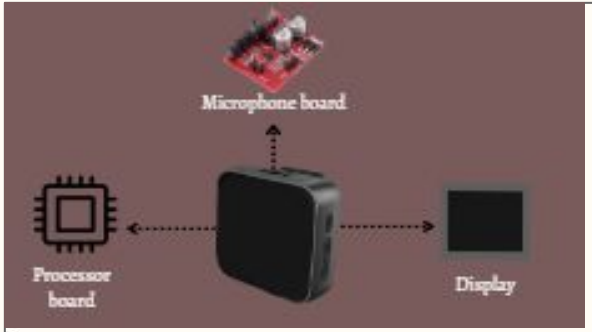


A Machine learning model can extract the dominant audio per time frame in a waveform by finding patterns in spectrograms. We use SER for both transcription and also for emotion recognition

TECH STACK

Machine learning, spectrograms
Numpy,Panda libraries for audio features processing
Mel-Frequency Cepstral Coefficients (MFCC) algorithm to extract the features.

REFERENCE/INSPIRATION



We took Alexa echo dot as inspiration for hardware framework of our project which is a comfort device for people with no hearing imparity. Audio visualizer can be a comfort device for Deaf-mute.
It is handy and portable.

TEAM DETAILS

KIND BRIDGERS

NAME	EMAIL
PRAVARDHITHA MYNENI	pravardhithamyneni@gmail.com
RATHNASRI BALINA	balinarathnasri@gmail.com
GOWRI SANKAR MAREPALLI	208w1a0595@gmail.com
SAM KENNANYA MEDURI	208w1a0598@vrsec.ac.in