

Project VoxCo

An electronic aid for persons with
hearing impairment

DISA PROJECT EVALUATION 2019

Team Members:

-XXXXXX XXXXX 2018XXXXXXXX
-XXXXXX XXXX 2018XXXXXXXX
-**Saurav Mittal 2018CH10243**

Facilitator- Dr. Sunil Jha
Head Of Department- *Prof. P. V. Rao*

What is the need/problem/product we are trying to address?

- ▶ A healthy person is aware of his environment by using his sight and hearing ability.
- ▶ People with hearing impairment are aware of their nearabout particularly to what they can see.
- ▶ They are sometimes unaware about emergency calls and sounds while they are outdoors.
- ▶ Conversing with one person is difficult, while conversing with more than one person is next to impossible, like in a conference.
- ▶ So our main objective is to make an assisting device to help them.

(Though hearing aids, FM systems and other Assistive listening devices (ALDs) exist but they are not for persons with complete deafness, while other Augmentative and alternative communication (AAC) devices use typing which is not user friendly.)

Innovation component in the project

- ▶ We'll have to Input sounds from microphones and convert them to signals.
- ▶ Convert the signals to digital form using analog-to-digital convertors.
- ▶ Search algorithms to process the signals using Digital signal Processor.
- ▶ Build an app using java and android studio and receive the signals.
- ▶ Modify and use the existing speech-to-text packages and implement it in the device app.

Background work

- ▶ The Knowledge about microphones and amplifiers.
- ▶ Learn about digital signal processors and its algorithms.
- ▶ Also study about existing speech to text packages and java as android app development language.

What will we show at the end of project?

- ▶ We aim receive sound from various source(s), process them using Digital signal processor and convert them to text form in a device. (number of sources scaled to three people)
- ▶ This will show real time speech to text conversion to the hearing impaired person
- ▶ At the end of the project we will be able to assist hearing impaired persons to converse with one or more person and alert them about emergency sounds.