

Title: Visual Hearing Assistant

Group #S18-39

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Abstract

There is a large population of people with hearing issues in society. As the smartphone becomes popular, we want to apply mobile technology on the hearing problems support area and reach a goal to help them identify what's happening around by analyzing sounds and coming up with information in messages. These text information can remind people to take corresponding actions if necessary. Considering professional teachers and time are needed for the sign language and assistant devices are expensive, we'd like to develop an App based on physical devices with a microphone.

Our work focuses on the deep learning algorithm. Steps include noise reduction, feature extracting and classification. We use convolution neural network to train the classification model. The final result is represented as an Android application with functions of real-time sampling, test and provide a friendly interface.

Keywords: sounds classification, neural network, MFCC, mobile App development, web server