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Making Karaoke by using Basic signal Operations

J-Component Report

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Abstract: In this project, karaoke is obtained by using basic operations in MATLAB. And performing scaling, shifting, reversal, addition and convolution of any selected audio signals or audio voices.

Keywords- Karaoke, Time Shifting, Time reversal, Time scaling

i. Introduction

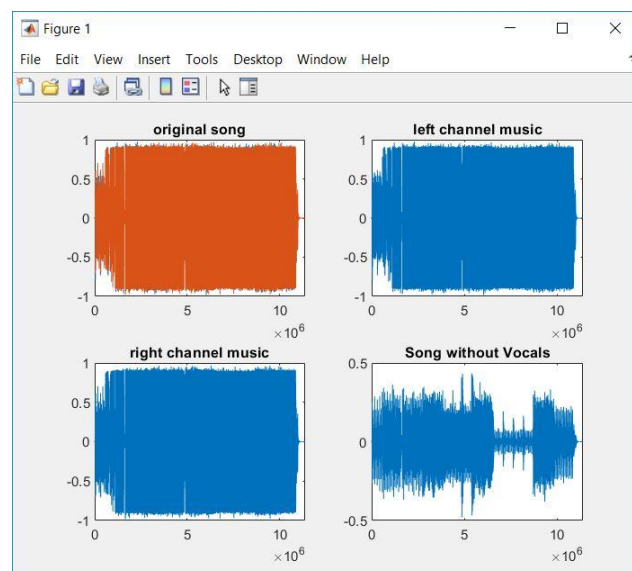
Addition, subtraction, multiplication, Shifting, and Scaling fall under the category of basic signal operations acting on the dependent variable. We concentrate on the basic signal operations which manipulate the signal characteristics by acting on the independent variable(s) which are used to represent them. Karaoke is a form of interactive entertainment or video game developed in Japan in which an amateur singer sings along with recorded music (a music video) using a microphone. The music is typically an instrumental version of a well-known popular song. Lyrics are usually displayed on a video screen, along with a moving symbol, changing colour, or music video images, to guide the singer.

ii. Matlab codes:

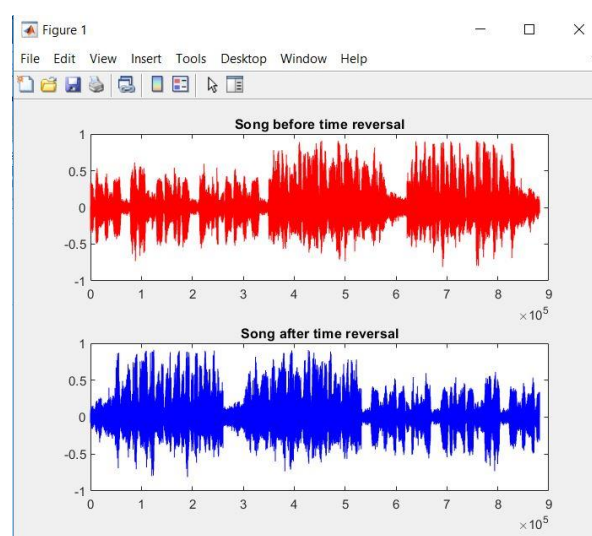
The below link is google drive link in which we have included the voice removal code, shifting, reversal, scaling of audio signal codes

<https://drive.google.com/open?id=16HfrzZAWCd8m8ZJR0k8tN71GScxUxw-V>

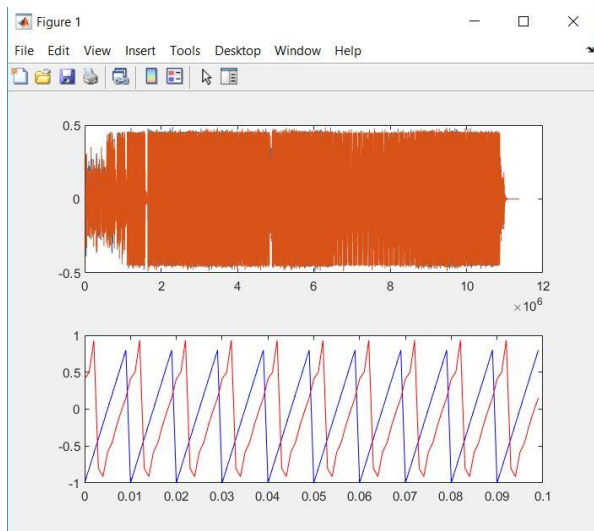
iii. MATLAB output:



The above fig shows us the actual song graph, the left and right channel music and the graph of song without vocals



The above fig shows us the song graph of before and after the time reversal



The above fig shows us the actual song graph and the comparison of actual and shifted song graph

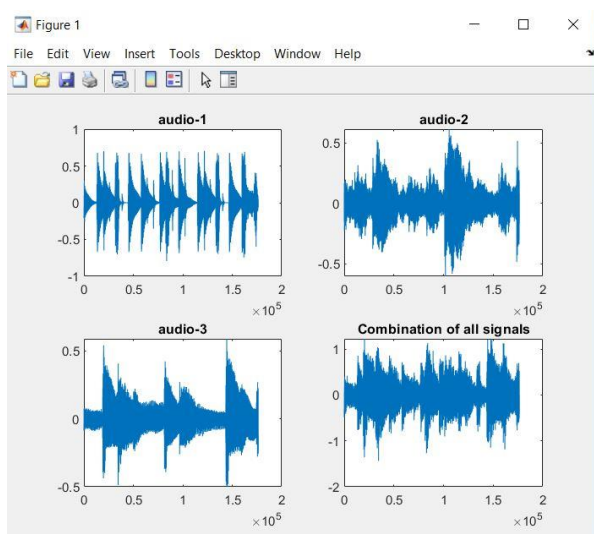
entertaining in between a group of friends who are out to have some fun.

And you also get to know if you sing well or you need to spare the world from your singing.

By adding sound signals we can mix up our favourite music and we can hear it

We can also use this in DJ's by increasing or decreasing the amplitude of certain audio signals while adding up

By shifting we can delay the music and by varying sampling frequency we can hear the song at slow rate or at fast rate .



The above graph shows us how we add 3 different audio signal such as drum beats, guitar and piano music graphs.

iv. Applications

Karaoke serves as the purpose of entertainment in a party where it can be included as a fun game to see who sings the best or it serves as the purpose of

v. Conclusion:

we are so glad that through this project, we have learnt how we can add the audio signals . and we have also learnt about the karaoke and how we can obtain it in the MATLAB . how to manipulate the audio signals and create our own music in MATLAB.

vi. References:

- <https://in.mathworks.com/matlabcentral/answers/106402-trying-to-remove-vocals-from-songs-create-karaoke-specifically-windowing-and-framing-help>
- <https://www.hackaudio.com/digital-signal-processing/combining-signals/adding-signals/>
- <https://www.hackaudio.com/computer-programming/audio-basics/>