CMPE491 – Senior Project I

Project Specifications Report

Voiceolation

1. Introduction

1.1. Description

The project aims to extract/isolate vocals from any song. It is really common to encounter music tracks with inaccessible vocal stems, tracks due to various issues. Extracting vocals - in general, source separation - is not only used for remixing or editing but also used for music information retrieval (MIR) in order to define and brand music genres. There are similar softwares available, though most of them have flaws due to insufficient datasets, only focusing on acoustic music etc. Furthermore, our goal is even if we can not surpass already existing projects, we believe we might look at this subject with a different angle.

1.2. Constraints

1.2.1. Economical

We understand from the research we have done so far that in order to get a result that can work the way we want, we need to work and test with large datasets. Therefore, our computer systems, free system or unit clouds can constraint the development of *Voiceolation*.

1.2.2. Ethical

We are aware of DMCA and copyright issues. In the testing phase of *Voiceolation,* we can use copyrighted music legally, but not allowed to share the results of these songs [1]. In order to reduce confusions, we will use open-source non-copyrighted datasets. In every possible way, we want to use also the most popular copyrighted songs to get real-life results.

1.3. Professional and Ethical Issues

Because of copyright issues, users must be agreed on that using *Voiceolation* is fully their responsibility. We do not recommend users to use *Voiceolation* for songs that may lead to legal issues. Thus, if they want to use *Voiceolation*, they must agree to the Terms of Service which does not conflict with DMCA. The user must know that *Voiceolation* has no responsibility for DMCA issues, it is their responsibility. Users know these and accept the Terms of Service, then they are able to use *Voiceolation*. So, we will obey the rules, planning to use the Creative Commons 4.0 licence [2].

We respect users' privacy. We do not ask, hold or store any kind of user information. In addition, we do not save uploaded sound files because it can also contain private information. We use the sound file only for processing and sharing the result of separation for the user and delete when the user is done.

2. Requirements

Our initial requirements are layered from signal processing to vocal recognition and their transforms into each other. Firstly, it must transform the sound file into a form which can be processeable, workable by computer. By working on that, it must detect the desired source (in our case vocals) and separate them as flawless as possible. Lastly, it must export the output as a sound file.

The requirements of this project can be upgradeable throughout the process. In future, while we are diving into depths of *Voiceolation*, we can try to implement isolating difficult vocal sources like autotuned, stereo, and/or panned vocal and vocaloids.

3. References

1. Stewart, Matthew. *The Most Important Supreme Court Decision for Data Science and Machine Learning*. 29 July 2020, towardsdatascience.com/the-most-important-supreme-court-decision-for-data-science-and-machine-learning-44cfc1c1bcaf.
2. "Creative Commons Legal Code." *Creative Commons - Attribution 4.0 International - CC BY 4.0*, Creative Commons, 2013, creativecommons.org/licenses/by/4.0/legalcode