

Informatics Institute of Technology

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Genre Recognition System

A dissertation by

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Abstract

It has been recorded that music was found in 800 BCE. It is mesmerizing how music has positively affected every life. For most people, music helps to reduce stress and enjoy the moment. With all the instruments that are currently being used to produce music, the experience has gone to the next level, where people now have a wide range of selection and choices they can make before choosing music of their style. The genre of the song mostly has been the go-to choice of most of the people when selecting a music piece that they might like.

This report contains research that we have done in order to identify genres in a programmatical way. By doing so, we expect that users can use this software and identify the correct genre of the music and choose whether it is a genre he likes or not. We gathered the exact requirements for the application by asking questions from people in the music domain, by giving out questionnaires to music enthusiasts. We have used the algorithm MFCC and STFT to make this project a success and we have covered why we used these algorithms in the literature review part. Then we have discussed how and why did we use Python combined with TensorFlow to implement the actual program of the application. After the implementation we have tested the application using various mechanisms such as functional and nonfunctional tests and since this is a Machine Learning program, we have done evaluations by using precision and recall tables, AUC and ROC curves. After all, we have asked few users who works with music to test the application and give out the feedback. By doing so, we were able to make sure that the final application from this project has achieved the goal.

Keywords: Machine Learning, Genre Recognition, Mel Spectrogram Function