Statistical Analysis based Music Classifying Method and Tool

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What kind of music do you like? The songs each person prefers are all different. Until now, we have to listen to music to know the characteristics of that music. It would be interesting if we can choose the songs we like without having to listen to them. For this purpose, we proposed a software application that can analyze music files and help people decide if they like the song or not. Our work consists on 3 parts. In part 1, we chose 3 main features of music and decided how to quantify each feature and then made a program to analyze, based on the three features, music quickly. We then tested our program by analyzing music of different era and comparing our results with the experts' opinion. In part 2, we analyzed therapy musics to classify songs in three categories which are 'liveliness', 'anger', and 'sadness.' We got these three categories from the studies of scholars who study music therapy. In part 3, we made an application by combining the results in part 1 and 2. We used radial graph to visualize or to input the characteristics of songs. We chose 'Shannon's entropy', 'tempo', and 'harmony' as the 3 factors to analyze. The analysis result by our program agrees with the expert's opinion. That means our research is reasonable. By analyzing therapy music with our program, we could classify more than 500 songs into three categories. Finally, we could make an application that can list music from the nearest one which has the similar value that we want. We could make an application which can recommend to people which music is good for some moment. It is possible to analyze only midi files for now. However, programs to translate MP3 files into midi files are being developed. So when those programs are available, our application will be more lucrative.

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