CISC 699 Final Applied Project

Annotated Bibliography

Title: MusicOn, a music player emulator

Professor: Abrar Qureshi

Author: Prafulla Chandra Munugoti

Term: Summer 2023

Date: 06/04/2023

[1]D. D., N. V.C. and C. M.L., "Music Therapy for Stress Control and Autism," 2019 1st International Conference on Advances in Information Technology (ICAIT), Chikmagalur, India, 2019, pp. 516-521, doi: 10.1109/ICAIT47043.2019.8987422.

Music is a collection of sounds that can have a profound effect on people's moods, feelings, stress levels, health, and physical actions. Music therapy is a growing field in medicine, especially for treating people with mental health conditions. Technology is being used in music therapy in innovative ways, such as data mining and robot-assisted sessions. By measuring people's blood pressure, we can get an idea of their stress levels and how music can help to reduce them. Heart rate can also be used to measure the effects of music therapy. Indian ragas are a key component of music therapy, and they have been shown to be effective in reducing stress and improving the quality of life for people with autism. In this paper, Authors present a case study on the effects of music therapy on people of different ages, at different times of day, using different ragas, and measuring their blood pressure. They also discuss how robots can be used to assist music therapy sessions for children with autism. The goal of this paper is to demonstrate that music therapy can be used as an alternative to medication for reducing stress and treating autism, and that it can also shorten the recovery time for these conditions.

I had used this paper and their research into consideration for the purpose of building a solid problem statement to work on music player that plays music, which had many positive impacts on various moods and various health conditions.

[2]O. Vaidya, K. Jadhav, L. Ingale and R. Chaudhari, "Hand Gesture Based Music Player Control in Vehicle," 2019 IEEE 5th International Conference for Convergence in Technology (I2CT), Bombay, India, 2019, pp. 1-5,

Music players are often used in cars, and they require interaction between the user and the system to access and control them. However, it has been reported that handling a music player system in a car while driving can be a distraction, leading to serious accidents. To address this issue, some cars have adaptive human-machine interaction systems that are expensive. However, a more affordable and accessible solution is to use hand gestures to control music player systems in cars. Paper Authors have developed a hand gesture-based music player control system for cars that uses an accelerometer sensor and a PIC microcontroller. The system is compact and lightweight, making it easy to install in a car. This system helps to access all functions of music player like change modes (i.e., FM/USB/Auxiliary/MP3 player). It can also be used to access all the functions of a music player, such as changing modes, rewinding, fast-forwarding, playing, pausing, and scanning through playlists. The system is very responsive, as it uses RF transceivers to transmit and receive data. Their system also outperforms other gesture recognition systems that rely on image processing techniques, as it does not require any post-processing. We believe that their hand gesture-based music player control system is a safe and affordable way to control music players in cars. It can help to reduce distractions while driving, and it is more accessible than other gesture recognition systems.

This paper helps me understand the basic features required for a music player application and helped me get the types of modes required to get to the fully functional music player. It also

gave me a partial problem statement to solve and provide a software for such hand gesture-based music player with all modes and functionalities.

[3]Kuch, M., & Wöllner, C. (2021). On the Move: Principal Components of the Functions and Experiences of Mobile Music Listening. Music & Science, 4. doi: 10.1177/20592043211032852

A recent study investigated the functions and experiences of mobile music listening. The study found that the most common functions of mobile music listening are mood-related and cognitive (e.g., enhancing mood, relaxation, preventing boredom). Social functions (e.g., feeling less lonely, feeling less watched) were less important. The study also found that the most common experiences of mobile music listening are adapting one's mood to the music and losing touch with one's surroundings. A principal component analysis of the ratings of functions and experiences revealed five underlying dimensions of mobile music listening: Mood Management: This dimension includes functions that satisfy individual needs, such as enhancing mood, relaxation, and preventing boredom. Absorption and Aestheticization: This dimension encompass deep listening experiences and altered perception of the surroundings. Social Encapsulation and Self-Focus: This dimension describes the distancing of oneself and changes in attention. Distraction and Passing Time: This dimension includes the prevention of being bored and making time pass faster. Auditory Background: This dimension is defined by a non-attentive and rather unaffected music listening. These results highlight the immersive Ness of mobile music listening. By creating an individual sound world, listeners distance themselves from their surroundings aurally and mentally, and modify their attention, perception, moods, and emotions. This can lead to an improvement of daily life experiences while moving.

This paper helped in building a strong case for developing the music player. This paper helps with detailed analysis of the various benefits that occur with listening to music and how it helps an individual enhancing the mood, relaxation, and prevention of boredom and so on.

[4] Mr. Mehraan Khan1 Ms. Leelasa Thakur2 Ms. Manika Arunkumar3 Ms. Simran Lopes, Prof.Nilam Parmar5 , “Music Player – Using Python”, International Journal of Research in Engineering and Science (IJRES), 2021

This paper proposes the development of a music player application that will allow users to play digital audio files on their desktop or laptop. The application will have a simple but beautiful user interface, and it will include features such as play, pause, stop, and listing of available music files. The application will also allow users to create playlists, and it will use the SQLite database to store playlist information. The music player application will be developed using the Python programming language. Python has several libraries that can be used to play audio files, such as the Pygame library. Pygame allows developers to work with media files in just a few lines of code. The music player application will be a valuable tool for users who want to play digital audio files on their desktop or laptop. The application will be easy to use, and it will offer several features that will make it a convenient and enjoyable way to listen to music.

This paper helped me developed the menu to add functions to my music player and improved the application with more robust Point in time recovery PGSQL database. I had also not restricted with the menu in the paper and improved it more for strong application. My application is an extended version of this paper.

[5] M. E. P. Davies, P. Hamel, K. Yoshii and M. Goto, "AutoMashUpper: Automatic Creation of Multi-Song Music Mashups," in IEEE/ACM Transactions on Audio, Speech, and Language Processing, vol. 22, no. 12, pp. 1726-1737, Dec. 2014, doi: 10.1109/TASLP.2014.2347135.

In this paper, Authors present a system called AutoMashUpper that can automatically create multi-song music mashups. The system calculates a measure of "mashability" between phrase sections of an input song and songs in a music collection. Mashability is defined in terms of harmonic and rhythmic similarity and a measure of spectral balance. The main novelty of our approach is that it allows us to make elements of songs fit together using key transposition and tempo modification, rather than just based on their unaltered properties. This means that the properties of two songs can be altered to maximize their perceptual compatibility. AutoMashUpper has a user interface that allows users to control the parameterization of the mashability estimation. Users can define ranges for key shifts and tempo, as well as adding, changing, or removing elements from the created mashups. We evaluate AutoMashUpper by its ability to reliably segment music signals into phrase sections, and via a listening test to examine the relationship between estimated mashability and user enjoyment.

This research paper gave me a though to add another feature to provide recommendations to users based on their playlist and the recently played songs. I also helped me getting another feature to add called music mix.

[6] Gonukula,A., Kuederli, P. & PasquierS (2008) Music Explorer Exploring the Space of Songs on your PC. Zurich: DCG.TIK.EE.ETHZ.CH.

This article provides a comprehensive overview of the problem of measuring similarity between music artists using text-based features extracted from web pages. The authors evaluate a variety of term-weighting strategies, normalization methods, aggregation functions, and similarity measurement techniques. They also conduct large-scale genre classification experiments on real-world artist collections to analyze the impact of different settings and parameters on the quality of the similarity estimates. The authors argue that accurate similarity measures for music are essential for many applications, such as automated playlist generation, music recommender systems, and music information systems. They conclude that by exhaustively analyzing the potential of text-based features derived from artist-related web pages, this article makes an important contribution to context-based music information research.

This article helped me gain some knowledge on adding more features to my music player application like automated playlist generation, music recommender systems, and music information systems and helps me achieving robust and user-friendly music player to use in any device.

[7] Michael Backman, Richard Bannon, “MP3 Radio The Truly Mobile & Wireless Music Solution” , the University of Washington, Seattle, WA

This paper discusses about the MP3 Radio which is a device that allows you to listen to your MP3 collection on any stereo with an FM tuner. It uses Intel's Personal Server and the newly developed Slappy card, along with a Bluetooth-enabled cell phone. The cell phone is used to control the device, which means you can browse through your music and create playlists from anywhere. This makes MP3 Radio a very portable and easy-to-use device. The main goals of the MP3 Radio project were to create a portable and easy-to-use device that could be controlled by a Bluetooth-enabled cell phone. The project was successful in achieving both goals. The project also shows the potential of Bluetooth-enabled cell phones in controlling other Bluetooth devices. Additionally, the project demonstrates that Intel's Personal Server can be a powerful mobile device when used in conjunction with other mobile devices.

This paper acted as a support to enable new modes in my project were FM mode, podcast mode. It was referred during the building phase of my projects core functionalities and make the application right in terms of implementation.

[8]Yushun Li, Meina Zhu, Lin Wu, Jiangjian Ma and Ronghuai Huang, "Research on applying Podcast technology for on-campus students," 6th International Conference on Digital Content, Multimedia Technology and its Applications, Seoul, 2010, pp. 161-166.

Podcast technology has become increasingly popular in recent years, and it has the potential to revolutionize education. This paper explores how podcast technology can be integrated into university scenarios, with a focus on the needs of learners and the methods of integrating podcast technology into curriculums. The paper also introduces the research results that have been achieved so far.

This paper helped me understand the importance of podcasts in modern world. It allowed me to improve my application by adding another mode to include podcasts for the users to play while using applications.

[9] Rime, J., Pike, C., & Collins, T. (2022). What is a podcast? Considering innovations in podcasting through the six-tensions framework. Convergence, 28(5), 1260–1282.

This essay explores two questions about podcast innovation and answered by reviewing the literature on podcasting history and evolution. The definition of podcasting that emerges from this analysis centers on episodic audio that is convenient to produce and listen to. This definition considers recent changes in podcasting and provides an up-to-date description of the term that can be used for further research on the topic. It also answers by reflecting on the essential features of podcasting and the necessity for innovation in this interdisciplinary medium. A framework of six tensions is proposed to ground and potentially boost innovation in podcasting. Answering these questions could be valuable for the future of podcasting. By providing a basis for reflection and development in both academia and industry, this essay could help to shape the future of this rapidly growing medium.

This essay helped me to understand the background of podcasts and how it can benefit the application under development. This paper suggested me the way to blend podcasts into my application.

[10] Laor, T. (2022). Radio on demand: new habits of consuming radio content. Global Media and Communication, 18(1), 25–48.

This study investigates how on-demand radio has changed the way people listen to the radio. The findings show that listeners who use on-demand radio listen to it more often, because they are not tied to a schedule. They also use the options offered by on-demand radio to satisfy their diverse needs, such as listening to specific songs or shows. The diversity of online radio offerings encourages listeners to consume more varied content. The study also found that on-demand radio offers interactivity, demassification, and a synchroneity. Interactivity allows listeners to interact with the radio station or other listeners, demassification allows listeners to find content that is tailored to their specific interests, and a synchroneity allows listeners to listen to radio content whenever they want. These features help on-demand radio to expand its distribution and maintain its role as a relevant medium of influence.

This study helped me to include on demand radio in my application for the users using the application. It is one of the features that is included in the application with wide variety of the options to choose from. It gives a sense in some importance of having FM support in the application.