ID 74

Music Emotion Recognition with Artificial Intelligence: Technologies, Applications, and Future Research Directions

MAS Sachinthani[1#] and GAD Ganepola[1]

[1]Faculty of Computing, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

[#]38-bit-0033@kdu.ac.lk

Abstract

Music is the emotional language. Music emotion identification has gained considerable attention in the academic and industrial communities since it can be widely used in fields like recommendation systems, automatic music composing, psychotherapy, music visualization, etc. Deep learning-based music emotion identification is gradually becoming popular, especially with the rapid development of artificial intelligence. The main aims of the research are to examine and review major topics: computer music emotion identification, emotional semantic-driven music retrieval, and emotional music synthesis technology. In this research Collecting a variety of datasets and utilizing machine learning models such as Convolutional Neural Network, Recurrent Neural Network, Support Vector Machine, and Random Forests are required for music emotion recognition using Artificial Intelligence (AI). These models use factors including rhythm, pitch, and pace to classify music according to emotions. Emotion and music have a strong link that drives artistic expression and therapeutic advantages. Affective computing impacts recommendation systems, therapy personalization, entertainment, and cultural conservation, particularly in music emotion analysis. AI's emotional analysis improves streaming experiences, personalizes therapy sessions, and influences marketing methods. AI handles the complexity that comes with emotional and cultural diversity easily. A system for recognizing emotions based on musical scales is yet to be developed. Finally, this paper concludes the possible future research directions and provides a review thorough examination of music emotion recognition and a review of the AI algorithms for the above-mentioned major projects.

Keywords: *Music emotion identification, Artificial intelligence, Machine learning models*