

Music Genre Recognition Using CNN

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Abstract— This paper presents a groundbreaking approach to Music Genre Recognition (MGR) using Convolutional Neural Networks (CNN) with Mel-frequency Cepstral Coefficients (MFCC) values, advocating for the integration of advanced techniques to enhance the recognition process. Traditional MGR systems often rely on basic features and simple classifiers, providing valuable but sometimes limited genre predictions. Our proposed approach leverages state-of-the-art methods such as CNNs, MFCC feature extraction, and ensemble learning to achieve unparalleled genre recognition accuracy. Key components of our system include a CNN architecture designed for processing MFCCs, feature selection methods for enhancing classification performance, and ensemble models that combine multiple classifiers to improve overall accuracy. This fusion of techniques aims to elevate the MGR experience, providing users with highly accurate genre predictions that reflect both the audio content and the nuances of different music genres. By embracing these innovations, our system redefines MGR, empowering users with dynamic genre predictions that adapt in real time. This adaptability ensures that genre predictions remain in sync with users' evolving tastes and the diverse nature of music, enriching their listening experiences across various musical genres.

Keywords—Convolutional Neural Networks, Music Genre Recognition, Mel-frequency Cepstral Coefficients, MFCC, Feature Extraction, Ensemble Learning, CNN, Genre Prediction, Audio Analysis, Deep Learning, Music Classification