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Exploring the Machine Learning Techniques for Music Genre Classification

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Abstract: *Music information retrieval is the process of obtaining high-level information about music, such as artist, genre, and instrumentation. The field of music genre classification (MGC) is a significant and quickly developing MIR. MGC entails classifying music according to genres (such as hip-hop, disco, rock, classical, etc.) based on an examination of its lyrical content or aural qualities. With its quick expansion, MGC is a valuable tool for managing and organizing streaming services, advertising, and music recommendation systems. Usually, there are two stages to this task: Extraction of audio features and modeling with machine learning. The study compares and evaluates the viability, performance, and understandability of features used to define music in order to predict the genre of music using machine learning techniques like Support Vector Machine, K-Nearest Neighbor, Random Forest, and XGBoost. Music of the same genre frequently has comparable topics (such love or death), the same instrumentation (drum, guitar), conveys similar moods (happy, sad), and has a similar speed (ranging from slow to rapid).Because one must listen to each song for its whole if music is classified manually, the application is crucial and needs automation to decrease human error and time. Spotify and Sound Cloud use genre categorization to suggest songs to their subscribers.*

Keywords: Music Genre Classification, feature Extraction, Support vector Machine, K-Nearest Neighbor, Random Forest, XGBoost

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