

Computer Vision CS1430 - Facial Emotion Recognition for Music Recommendation

Facial expressions are fundamental to human communication, serving as the most instinctive means of expressing an individual's inner feelings. Similarly, music is deeply intertwined with emotions, with specific genres often evoking distinct moods. However, there is a noticeable lack of music software capable of generating playlists based on a user's current emotional state. In this project, we develop and train two models: one utilizing a VGG-based architecture and another employing a simpler CNN architecture for facial emotion recognition. These models are optimized for different purposes – one for accuracy, achieving a classification accuracy of 67.92%, and the other for real-time facial emotion recognition using webcam-captured images. We categorize facial emotions into seven distinct categories: anger, disgust, fear, happiness, sadness, surprise, and neutral, enabling real-time detection and mood analysis. Using a custom mapping of emotion to music genres, we generate a Spotify playlist based on the predicted emotion, compiling songs that align with the identified mood. This integration of facial emotion recognition and music selection offers a novel approach to curating personalized playlists, aiming to elevate the user's music listening experience by making it effortless and deeply personalized.