

# AI Powered Real Time Emotion Detection and Recommendation System

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**Abstract:** In the modern digital world, AI and machine learning have changed the way human beings communicate with technology. Emotions are one of the most incredible parts of human communication, and when interpreted by intelligent systems, they can turn digital life into a highly personalized and meaningful experience. The AI-Powered Real-Time Emotion Detection and Recommendation System is a deep learning-based system capable of detecting varied facial expressions, such as happiness, sadness, anger, and surprise from the facial expressions of the user in real time. It will then make recommendations, like music, movies, or places around, according to the detected mood to elevate or sustain the user's mood. Realizing the system through CNNs and their integration with APIs such as Spotify and Google Places led to its accuracy and responsiveness. This project came up not only to help improve emotional conditions but also to bridge the gap between human feelings and intelligent technology in a considerable manner. The solution shows how AI can help in building empathetic systems that understand users and respond thoughtfully to their emotional states.

**Keywords:** Emotion detection, deep learning, facial expression recognition, personalized recommendations, real-time analysis, human-computer-interaction