DOI: https://doi.org/10.36094/sc.v92.2026.Intelligent_Emotion_Detection_Systems.Gupta.672

ARTICLE

Sci. and Cult. 92 (9–10) : 672-678 (2026)

INTELLIGENT EMOTION DETECTION SYSTEMS USING MACHINE LEARNING AND MULTIMODAL DATA ANALYTICS

DIVYANSH GUPTA[1], NAMRATA DHANDA[2]* AND KAPIL KUMAR GUPTA[1]

Sentiment detection is a significant application of machine Sentiment detection is an important use of machine learning that looks for and sorts opinions in text data into three groups: positive, negative, or neutral. Because of the huge amount of user-generated content on social media, blogs, and online review systems, automated sentiment analysis has become very important for understanding public opinion and making smart choices. This paper talks about a way to use supervised learning techniques to find sentiment quickly and accurately using machine learning. Data gathering, text preparation, feature extraction, model training, and sentiment classification are all part of the system's structured pipeline. To lower noise and enhance data quality, preprocessing techniques such tokenization, stop-word removal, normalization, and stemming are used. The Term Frequency– Inverse Document Frequency (TF-IDF) technique is used for feature extraction, which transforms textual input into numerical representations. A number of classification models are trained and assessed, such as Naïve Bayes, Support Vector Machine (SVM), and Logistic Regression. The suggested method achieves consistent accuracy in sentiment categorization tasks, according to experimental data. SVM and Logistic Regression outperform the other models in terms of consistency and performance. The outcomes emphasize how crucial efficient preprocessing and feature selection are. The suggested method can be expanded to real-time and multilingual applications and offers a scalable and effective automated sentiment analysis solution.