

# A Survey on Facial Emotion Recognition (FER) using Machine Learning and Deep Learning Methods

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**Abstract:** *Humans have traditionally found it simple to identify emotions from facial expressions, but it is far more difficult for a computer system to do the same. Emotions possessed by humans can be detected by machine and has a vast scope of study in the computer vision industry upon which several research have already been done. Facial emotion analysis is efficiently used in surveillance videos, expression analysis, gesture recognition, smart homes, computer games, depression treatment, patient monitoring, anxiety, detecting lies, psychoanalysis, paralinguistic communication, detecting operator fatigue and robotics. The literature is collected from different reputable research published during the current decade. The purpose of this paper is to make a study on recent works on facial emotion recognition via Deep learning and Machine Learning to highlight the future gap in this domain for new researchers. In conclusion, this review work serves as a guide and is highly beneficial for researchers in the field of Facial Emotion Recognition (FER), offering a broad understanding and foundational knowledge of the state-of-the-art methodologies now in use.*

**Keywords:** facial expressions; facial emotion recognition (FER), Deep learning, Machine Learning