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| S.NO | TITLE | AUTHOR | DATASET USED | ALGORITHM | FINDINGS | GAP |
| 1. | Face Detection and Recognition Using Machine Learning | Raktim Nath, Kaberi Kakoty, and Dibya Jyoti Bora | Dataset is not mentioned in the paper. So, some datasets for face recognition include LFW dataset, CelebA dataset etc… | Histogram of Oriented Gradient (HOG) | The HOG-based face detector showed higher accuracy. The CLAHE-HOG-SVM approach demonstrated improved face recognition performance. | |  | | --- | | The paper identifies the need for better preprocessing steps and techniques for improving face recognition. It also mentions the ongoing challenge of face recognition algorithms' performance**.** | |  | |
| 2. | Facial Expression Recognition System for Stress Detection with Deep Learning | José Almeida and Fátima Rodrigues | **-** | Convolutional Neural Networks (CNNs) | The system results in classifying stressful emotions based on facial expressions, using a non-invasive approach that only requires a webcam. | The need for non-intrusive stress sensing tools that continuously monitor stress levels in real-time, with minimal impact on daily life, to initiate timely stress-reduction interventions. |
| 3. | Face Recognition using Deep Learning | Banumalar Koodalsamy, Manikandan Bairavan Veerayan, and Vanaja Narayanasamy | FERET database | Haar cascade, linear binary pattern histogram (LBPH) | Achieved accuracy of CMC: 99.33% and EER: 1% on the FERET database. | Advancing face recognition technology to replace RF I-Cards and passwords, addressing privacy issues and potential biases. |
| 4. | Facial Emotion Recognition using CNN | Subina Thasneem P.A., Santhi P | **-** | Convolutional Neural Networks (CNN) | It shows real-time facial expression recognition algorithm using OpenCV, Keras, etc.. It focus on detecting, extracting the facial expressions to classify emotion | It highlights the growth of visual data on the internet and the need for facial expression recognition in various research areas such as psychological behavior examination, human-machine interaction etc. It exploring different regularization and data augmentation techniques with CNNs for better facial expression recognition. |
| 5. | Facial Expression Recognition Via Enhanced Stress Convolution Neural Network for Stress Detection | Wan-Ting Chew, Siew-Chin Chong, Thian-Song Ong, Lee-Ying Chong | FER2013 dataset | Enhanced Stress Convolutional Neural Network (ESCNN) | This algorithm with MobileNet V2 achieved better performance than ResNet 50 and Sequential Model for stress recognition based on facial expressions. | The need for lightweight and reliable methods for stress detection using facial expression recognition. It proposes ESCNN as a solution to improve the performance of stress recognition systems. |
| 6. | Facial Expression Recognition with CNN-LSTM | Bui Thanh Hung, Le Minh Tien | JAFFE database | CNN-LSTM (Convolutional Neural Network - Long Short-Term Memory) | This model achieved better results than other approaches in facial expression recognition. | This emphasized for facial expression recognition models by combining CNN and LSTM, which outperforms other methods. |
| 7. | Facial Expression Recognition from a Single Face Image Based on Deep Learning and Broad Learning | Mei Bie, Huan Xu, Yan Gao, Xiangjiu Che | **-** | Combination of deep learning and broad learning techniques, specifically CNN (Convolutional Neural Network) and BLS (Broad Learning System) | This improves facial expression recognition accuracy. Deep learning facilitates end-to-end feature learning, while BLS helps reinforce network structures. | Despite advancements in deep learning and broad learning, challenges such as robustness, real-time performance, and handling outliers and noise in datasets still need to be addressed in facial expression recognition research. |
| 8. | Facial emotion recognition using deep learning detector and classifier | Ng Chin Kit, Chee-Pun Ooi, Wooi-Haw Tan, Yi-Fei Tan, Soon-Nyean Cheong | Two distinct facial emotion training datasets. (Not mentioned in paper) | Facial emotion recognition pipeline using five state-of-the-art CNN architectures for training emotion classifier, by focus on optimizing speed-accuracy trade-off. | Grayscale-aligned facial images offer better recognition rates with lower latency. The lightweight MobileNet\_v1 with specific hyperparameters achieved an overall accuracy of 86.42% dataset on the testing video dataset, demonstrating the speed-accuracy trade-off among the tested CNN architectures. | Despite the advancements in deep learning-based facial emotion recognition, challenges remain in optimizing the cost, especially during inference, while maintaining high accuracy. |
| 9. | Face Recognition Using Deep Learning | Ankit Sharma, Hardik Verma, Anuj Tiwari, Hatesh Shyan | Publicly available datasets such as LFW (Labeled Faces in the Wild), CelebA, and etc.. | Convolutional neural networks (CNNs) and deep learning methodologies | The use of grayscale-aligned facial images for training better recognition with lower latency. The lightweight MobileNet\_v1 with specific parameters achieved an overall accuracy of 86.42% on the testing video dataset | Challenges remain in lowering the cost of deep learning-based approaches, especially during inference, while maintaining high recognition accuracy. Further research is needed to address these challenges. |