Topic: Real-Time-Facial-Emotion-Recognition-Using-Deep-Learning

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Date: 03-10-2025

Project Current Report:

Introduction: This project develops a real-time facial emotion detection system to classify expressions like Surprise, Happy, Sad, Angry, and Neutral from images or live video. It has applications in security, human-computer interaction, and mental health analysis, with potential for a user-friendly interface.

Dataset and Preprocessing: This project I used the FER-2013 dataset from Kaggle, containing 48x48 pixel grayscale facial images. It includes 28,709 training and 3,589 test images labeled with seven emotions: Angry, Disgust, Fear, Happy, Sad, Surprise, and Neutral. Preprocessing ensures alignment, and data augmentation (zooming, flipping, rotation) enhances model performance.

Model Development and Training: I was developed using Convolutional Neural Networks (CNNs). The dataset was loaded, and emotion labels were defined for classification. And I trained the model on Google Colab, with the dataset stored in Google Drive. During training, the system analyzed the images, adjusted weights, and optimized accuracy. After multiple iterations, the model achieved 90% accuracy. The trained model was then saved and imported into the project folder for further testing.

Testing and Future Improvements: The next phase of the project involves testing the model with new images and live video to evaluate its accuracy in real-world scenarios. If any issues arise, debugging and further optimization will be performed. Additional improvements, such as refining the model and integrating a user-friendly interface, may be implemented to enhance usability.

For any further suggestion, please feel free to advise me.

Regards,
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