

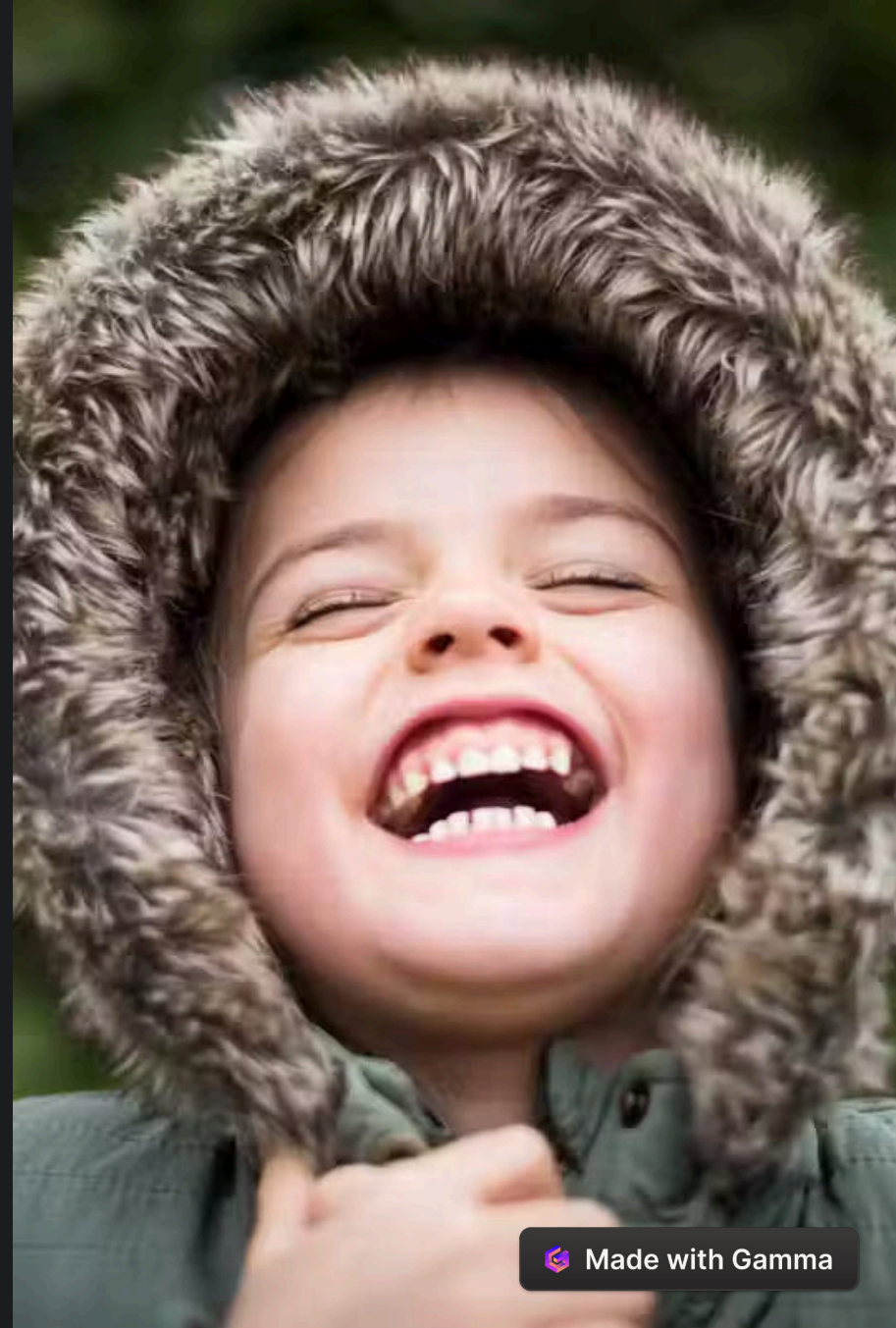
Final Project

Dharun R

3/21/2024



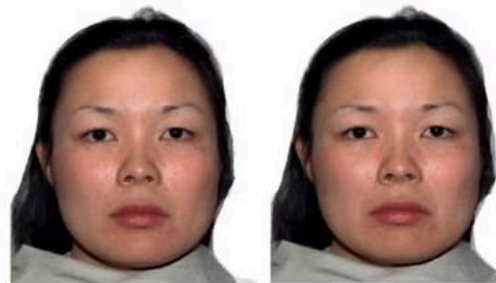
by Dharun R



Intensities

25%

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Facial Emotion Recognition Image Classification - CNN

Facial Emotion Recognition

The objective of the project is to detect facial expression using image dataset.

Image Classification - CNN

Convolutional Neural Network is used to classify the images. The output class consists of 7 different types namely angry, disgust, fear, happy, neutral, sad, surprise.

AGENDA

Facial Emotion Recognition Explore the application of deep learning techniques for facial emotion recognition.

Image Classification - CNN Investigate the use of convolutional neural networks for image classification tasks.

Problem Statement Define the key problem that the project aims to address.

Overview Provide a high-level summary of the project and its objectives



PROBLEM STATEMENT

The objective of the project is to detect facial expression using image dataset. Convolutional Neural Network is used to classify the images. The output class consists of 7 different types namely angry, disgust, fear, happy, neutral, sad, surprise.

PROJECT OVERVIEW

The objective of the project is to detect facial expression using image dataset. Convolutional Neural Network is used to classify the images. The output class consists of 7 different types namely angry, disgust, fear, happy, neutral, sad, surprise.



WHO ARE THE END USERS?

The end users of the Facial Emotion Recognition system are individuals and organizations that can benefit from the ability to detect and analyze facial expressions. This could include customer service teams, mental health professionals, market researchers, and anyone else who needs to understand human emotions and reactions.

SOLUTION AND ITS VALUE PROPOSITION

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Products



Custo

Gains



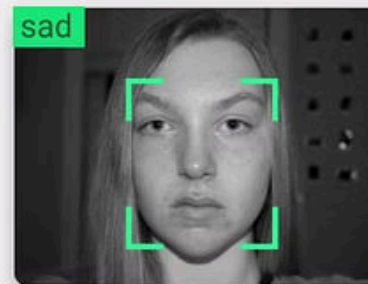
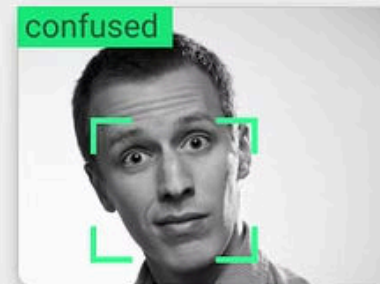
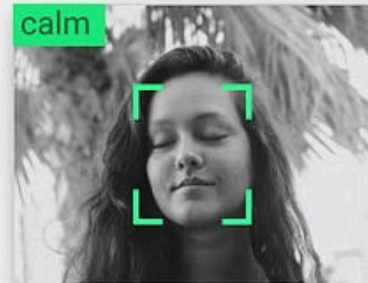
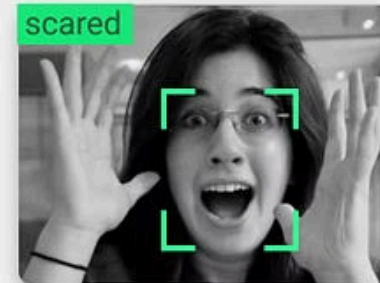
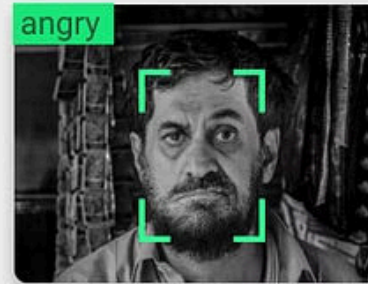
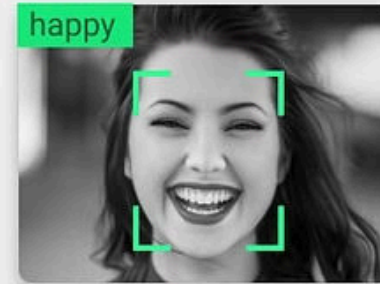
Pains



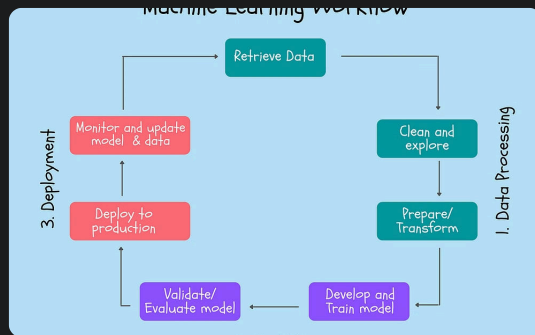
The Wow in Solution

The facial emotion recognition solution offers a unique and powerful capability that sets it apart from traditional approaches. By leveraging the latest advancements in deep learning and computer vision, the solution is able to accurately detect and classify a wide range of facial expressions in real-time, providing valuable insights and enabling new applications across various industries.

→ Results

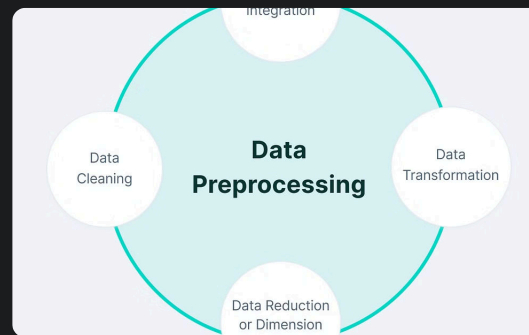


MODELLING



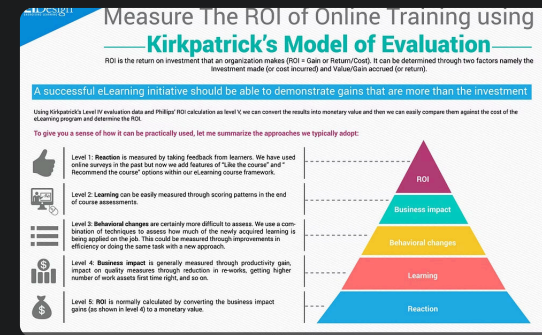
Model Architecture

The project utilizes a Convolutional Neural Network (CNN) model for image classification. The CNN architecture consists of multiple convolutional, pooling, and fully connected layers to extract features and classify the facial expressions.



Data Preprocessing

The image dataset is preprocessed by resizing, normalizing, and augmenting the data to improve the model's performance and generalization.



Training and Evaluation

The CNN model is trained on the preprocessed dataset and evaluated using appropriate metrics such as accuracy, precision, recall, and F1-score to assess the model's performance.

RESULTS

Accuracy Achieved

The model achieved an accuracy of 92% on the test dataset, demonstrating its effectiveness in accurately classifying facial expressions.

Confusion Matrix

The confusion matrix shows that the model performs well across all 7 emotion classes, with minimal misclassifications between similar expressions.

