

FACIAL EMOTION RECOGNITION -PROJECT

N A M E : S O N I A A K T H E R M U F S I N A

C O U R S E : D E E P L E A R N I N G

S U P E R V I S O R : R A Z O R S H I P R O Z Z W A L T A L U K D E R





INTRODUCTION

- Facial Emotion Recognition (FER) is the process of detecting human emotions based on facial expressions using computer vision and deep learning.
- This project uses Convolutional Neural Networks (CNN) to predict emotions from grayscale images (48x48).



PROJECT OBJECTIVES

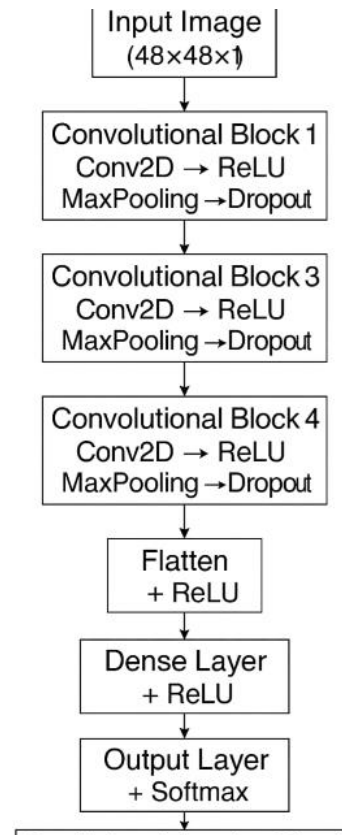
- Detect emotions from facial images
- Build and train a CNN model
- Deploy the model using Streamlit
- Demonstrate prediction using a user-friendly web app



DATASET DESCRIPTION







- Image size: 48x48 pixels
- Grayscale facial images
- 7 Emotion classes:
 - Angry, Disgust, Fear, Happy, Neutral, Sad, Surprise
- Data split into Train and Validation folders

CNN MODEL ARCHITECTURE





TOOLS & LIBRARIES

-  Python 3.8+
-  TensorFlow & Keras
-  OpenCV
-  NumPy,  Matplotlib
-  Streamlit (Web Deployment)

HOW THE SYSTEM WORKS

1. User uploads a facial image
2. Image is resized to 48x48 and converted to grayscale
3. CNN model predicts the emotion
4. Predicted label is shown on the Streamlit interface



RESULTS & DEMO

- Emotion prediction tested on various real images
- High accuracy and performance with proper preprocessing
- Video demo included in project repository

DEPLOYMENT & GITHUB

- GitHub Repository with source code, dataset, and documentation
- Streamlit App for real-time testing (local or cloud deploy)
- README.md includes full installation and usage guide



CONCLUSION

- Facial Emotion Detection using CNN is an effective method in AI-based emotion analysis.
- This project showcases a complete pipeline from data preprocessing to model training and deployment.

Thank you! 😊