Capstone Project

Facial Emotion Recognition

By Sara Ismail Tily
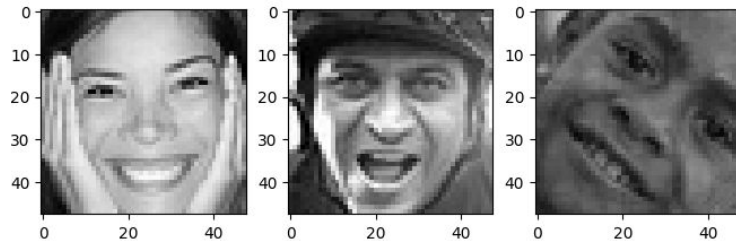06/18/2023

Outline

- Problem Statement

- Data Summary

- Model / Analysis

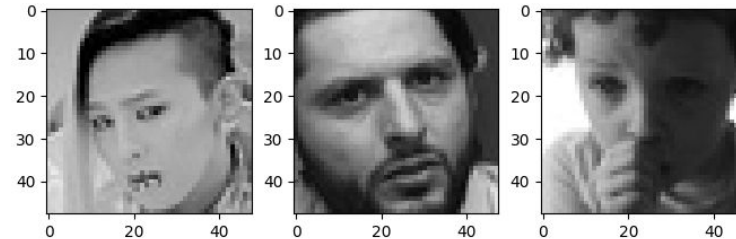- Solution Approach

- Result / Recommendation

- Conclusion

Problem Statement

The goal is to create a model which can accurately detect facial emotions.
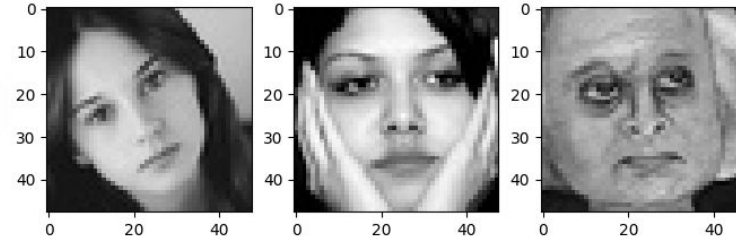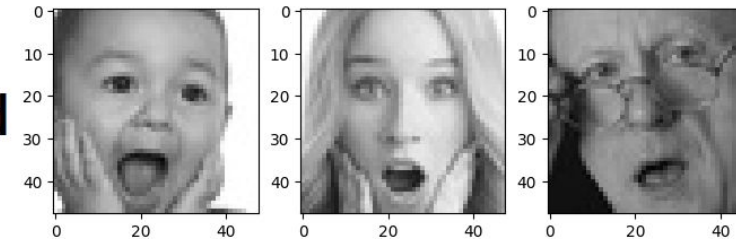
Data Summary
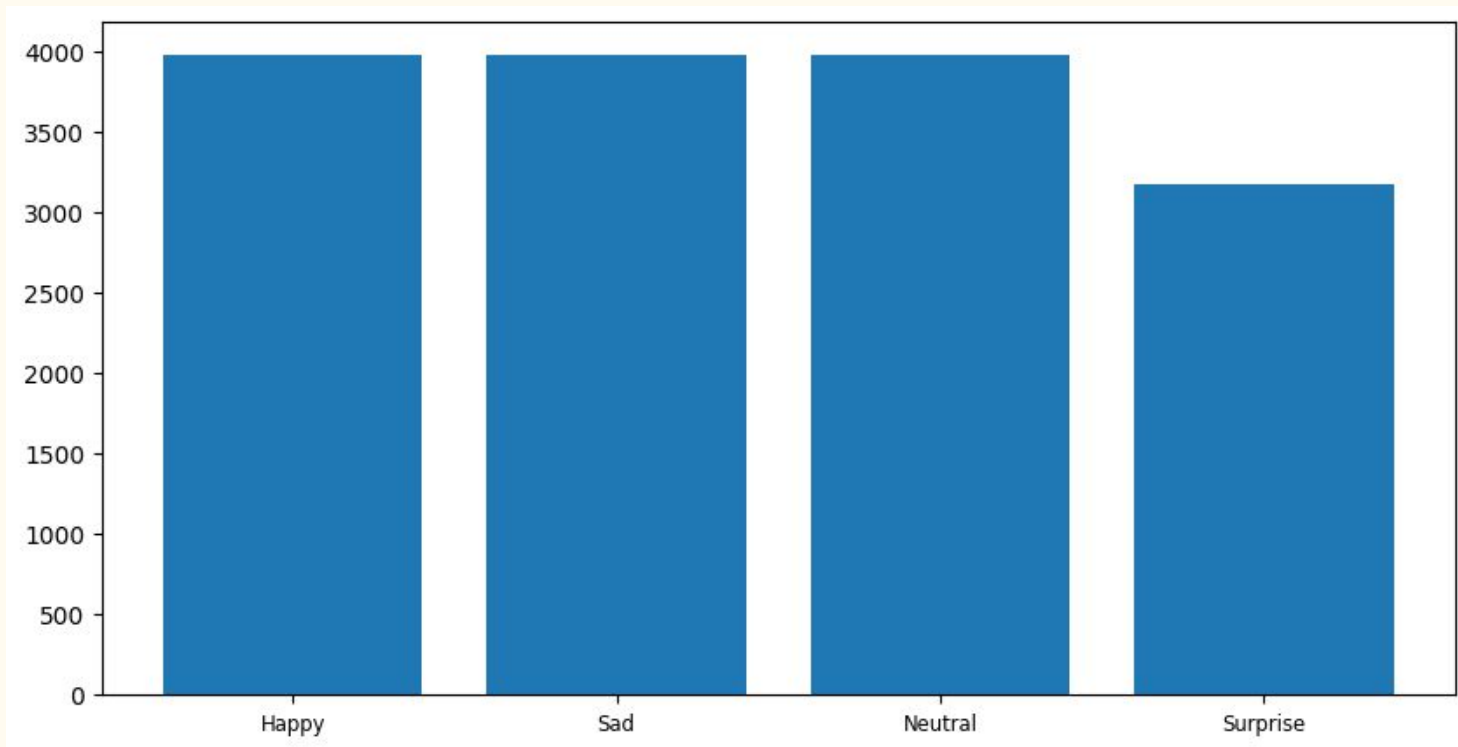
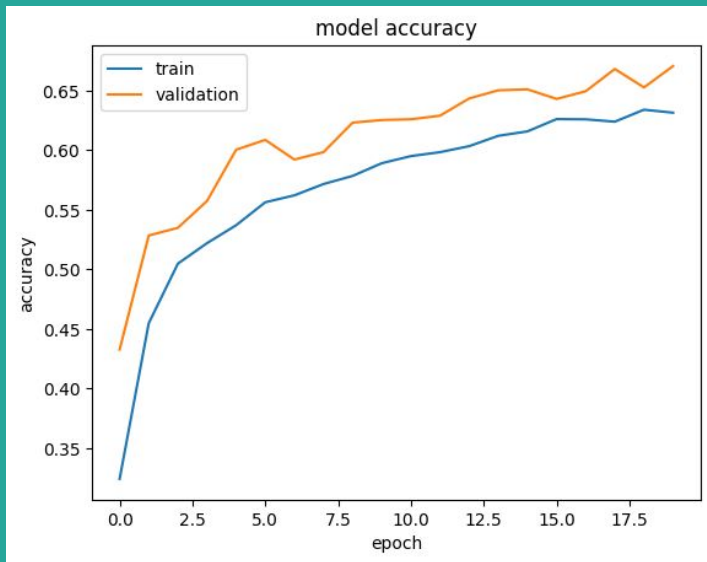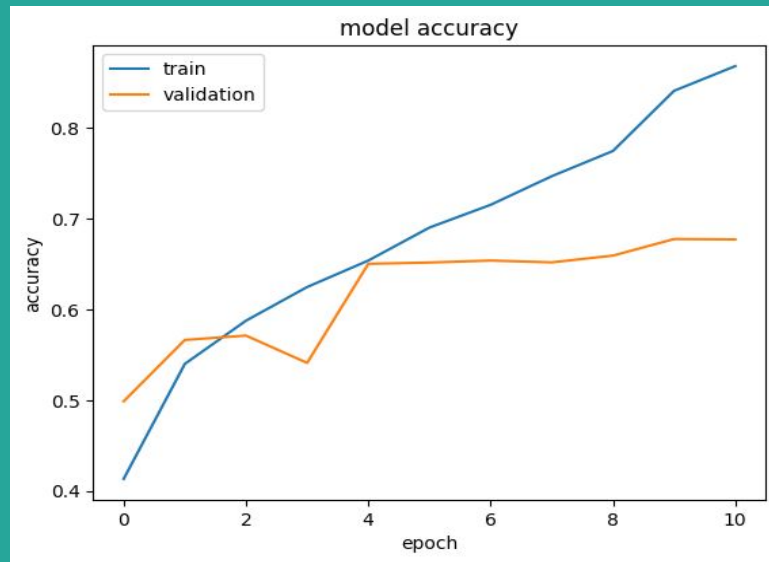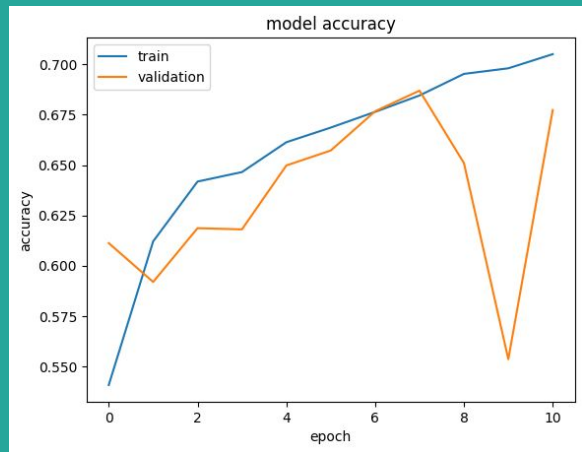# Neural Network Model
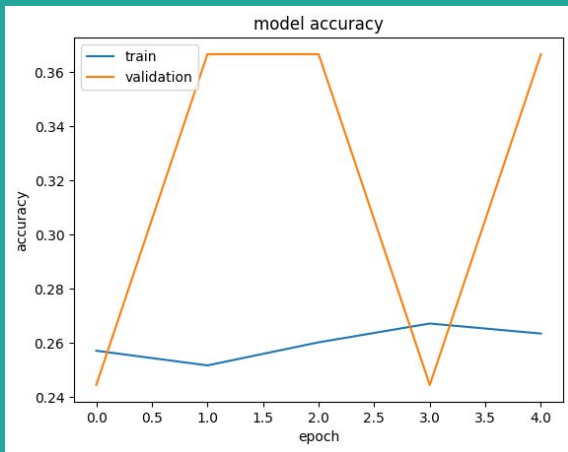

Basic Neural Network
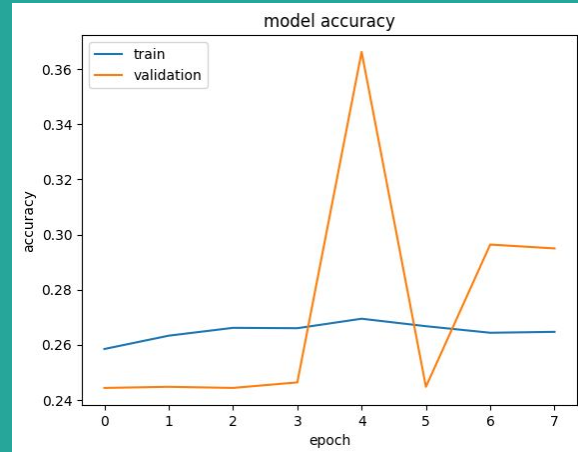
Convolution Neural Network
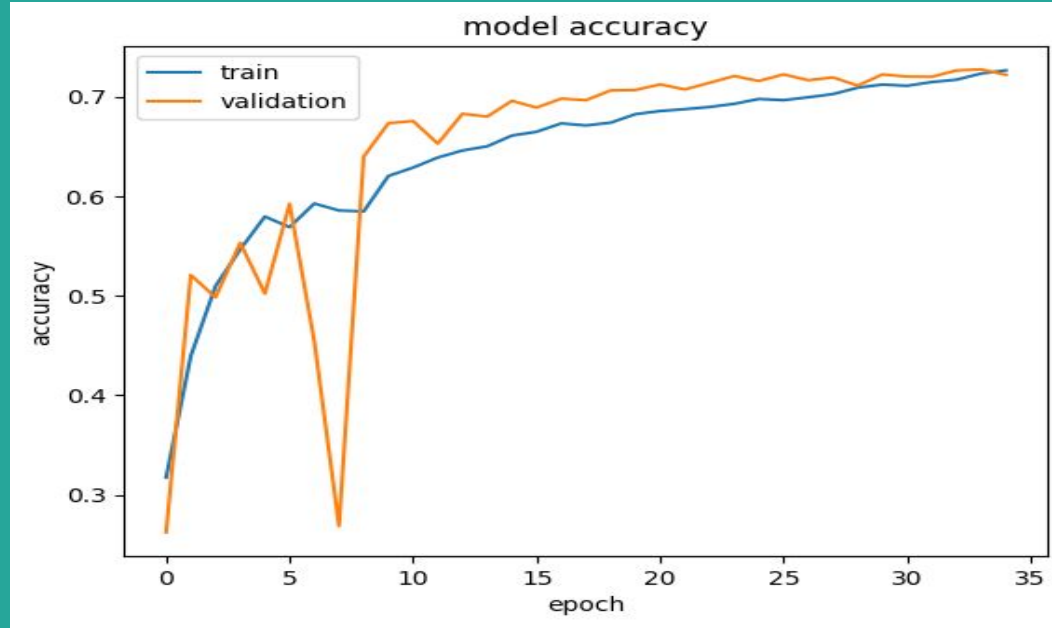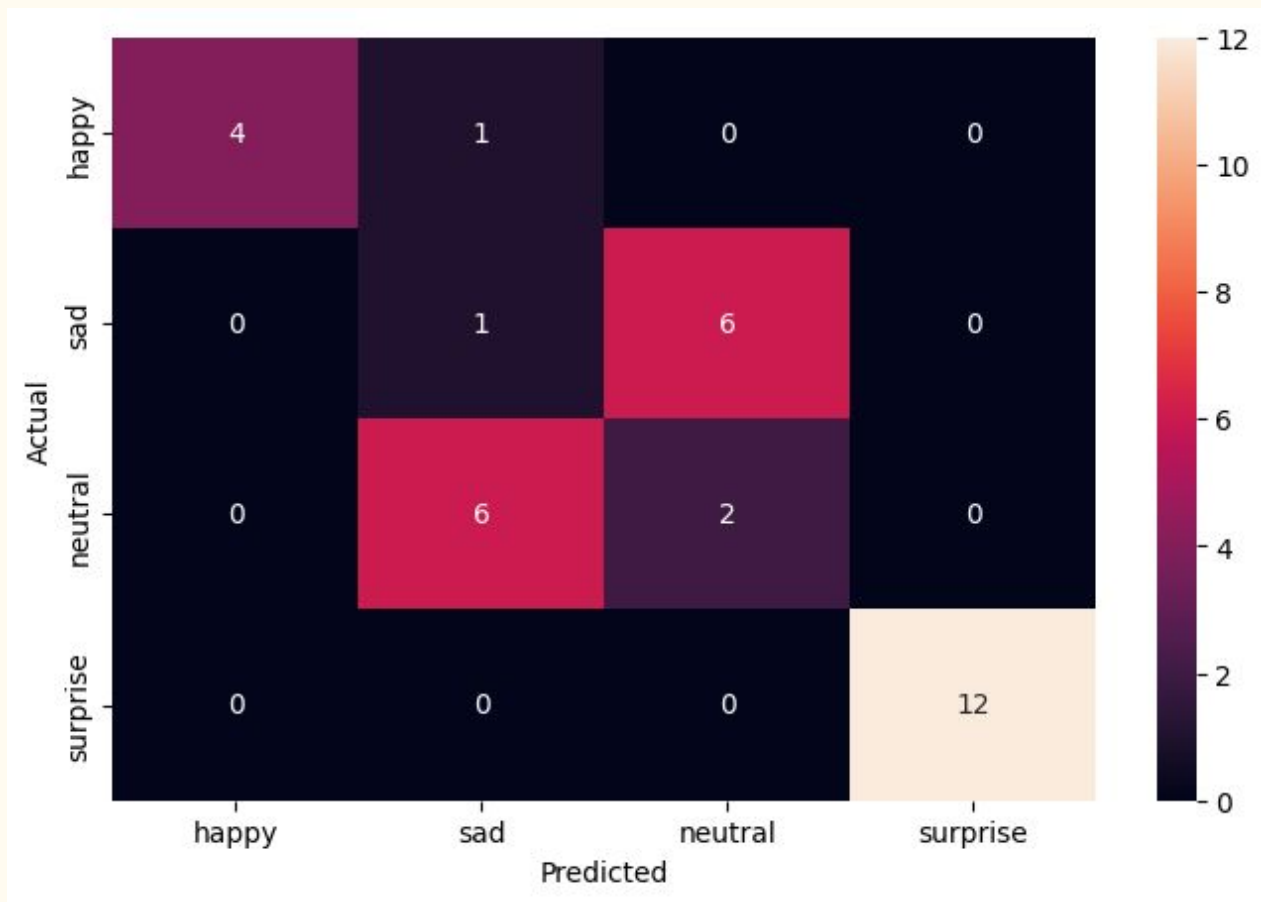
Transfer Learning Models

VGG16

Resnet

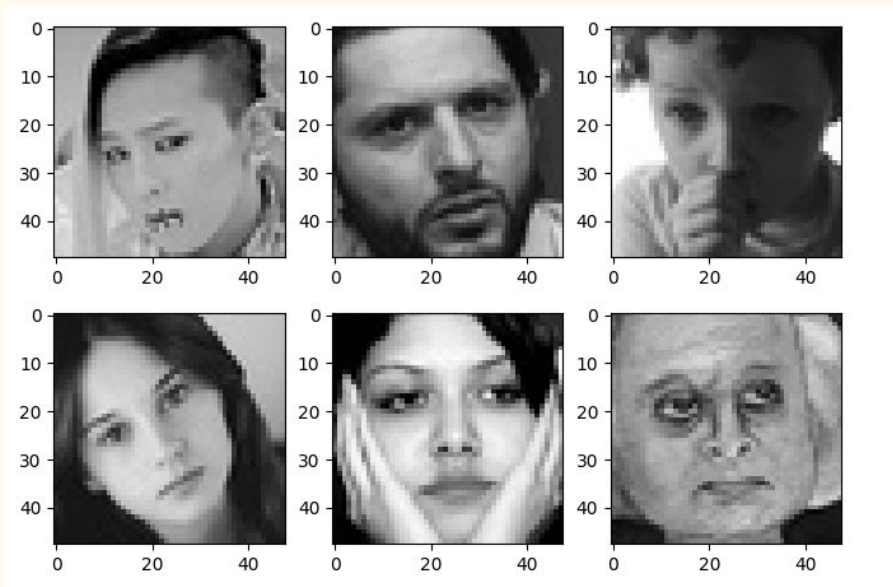EfficientNet

Complex Neural Network Architecture

Confusion matrix

Recommendation for Implementation

- Sad and neutral facial expressions are very similar

Conclusion

- 4 classes of images, namely happy, sad, neutral and surprise.

- The dataset is evenly distributed amongst all the classes

- In this notebook, we have implemented several models from scratch and use transfer learning to make predictions.

- Transfer learning models (VGG16, resnet V2, efficientNet) performed poorly

- Complex Neural Network Architecture is comparatively promising
- Model was giving 60% accurate result, which is adequate but not adequate enough for deployment on production.

- This model is doing well with happy and surprised images, but not with images, having sad and neutral facial expression.

Thank you