

Spotle Ai-thon level - II : Mood detector app

Rohan Khaitan, Aritra Banerjee, Subhasish Basak

Team name : Student's tEAM

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1 Introduction

The objective of this study is to classify mood of the person from facial expressions. Images are categorized in three classes namely sadness, fear and happiness based on the emotion shown in the facial expressions.

The link to the GitHub repository is as follows: [Click here](#)

2 Model used

After experimenting with available image classifiers, we decide upon **VGG-16**. A detailed description of the model can be found here : [Click here](#)

3 Data Loading & Preprocessing

With the datasets provided **aithon2020_level2_training.csv**, for validation, fine tuning the hyper-parameters and testing purpose we use a smaller validation set out of it. We split the data into *Train* : *Validation* in the ratio 70 : 30. :

We pre-process the data using the following steps :

- **Normalizing** : We normalize the images by dividing each pixel value by 255. The inbuilt Keras library is used for Data augmentation
- **Reshaping** : We also need to reshape the input dimension of the VGG model, since it has default input dimension $80 \times 80 \times 3$. We use the following image configurations:
 - **Image height** : 48
 - **Image width** : 48

4 Model configuration

After fine tuning we run the final VGG-16 model with the following configuration:

- **Batch size** : 64
- **epochs** : 50
- **optimizer** : Adam
- **Initial learning rate** : 0.0001

5 Results

- **Training accuracy** : 100%
- **Validation accuracy** : 75%