Your-Shoulder

Your personal in-house psychologist!

THE TEAM

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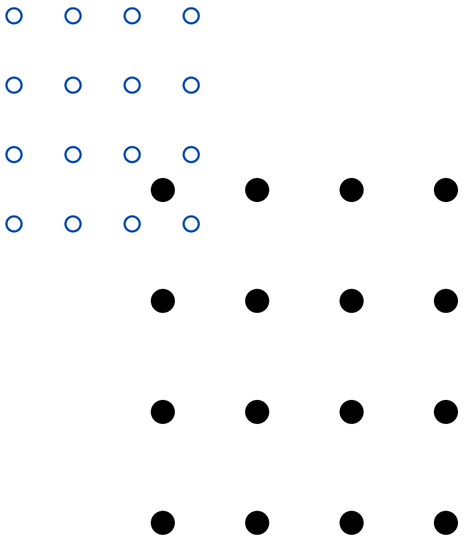
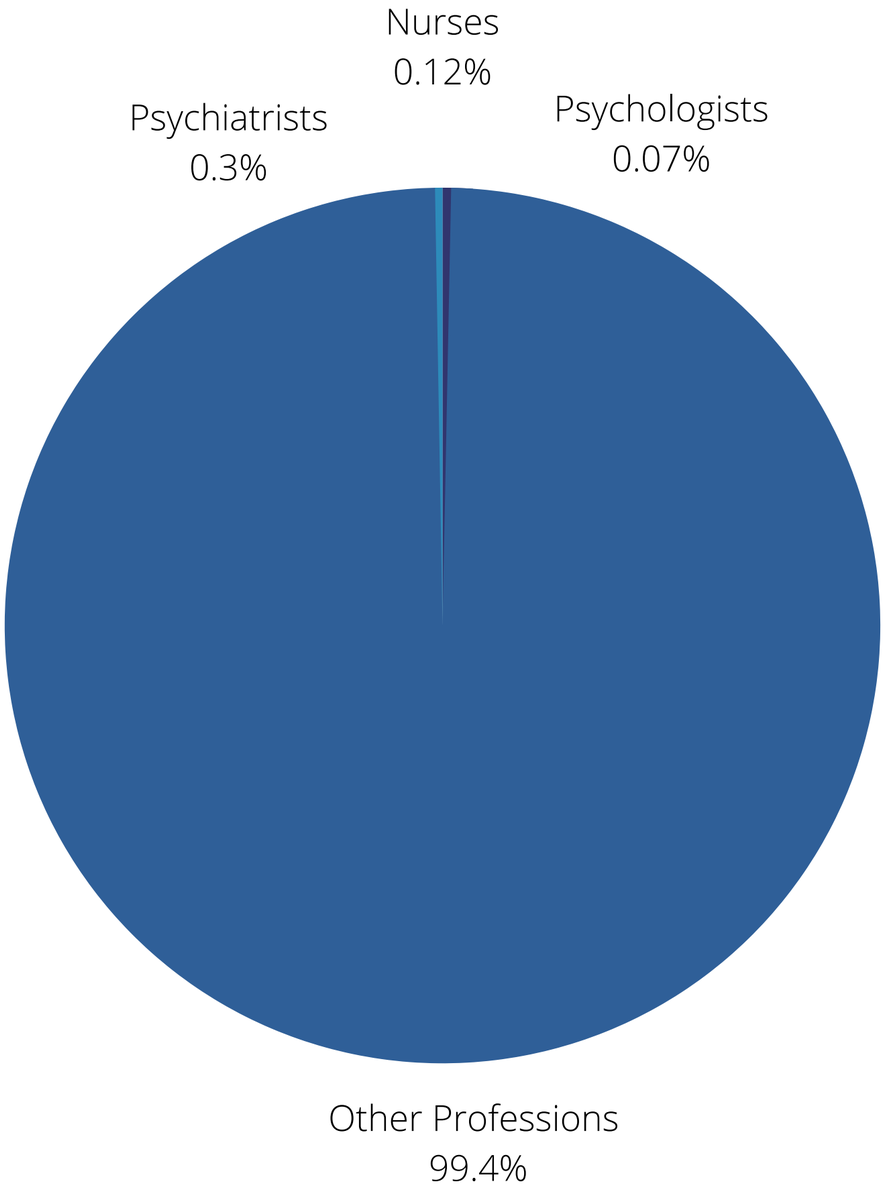
LIST OF CONTENTS



Problem Statement

"India also accounts for 36.6 per cent of suicides globally."

"By end of this year roughly 20 per cent of India will suffer from mental illnesses."



Going through therapy is still considered as a taboo in most countries. The unavailability of psychologists, therapists and psychiatrists is one of the stemming reasons. The need of the hour is to make this service accessible for all.

Refernce- WHO

Technology Used

Technology-

TensorFlow

Keras

TFJS (TensorFlow JS)

Flask

Scikit-learn

Open CV

Languages-

Python

HTML

Java Script

CSS

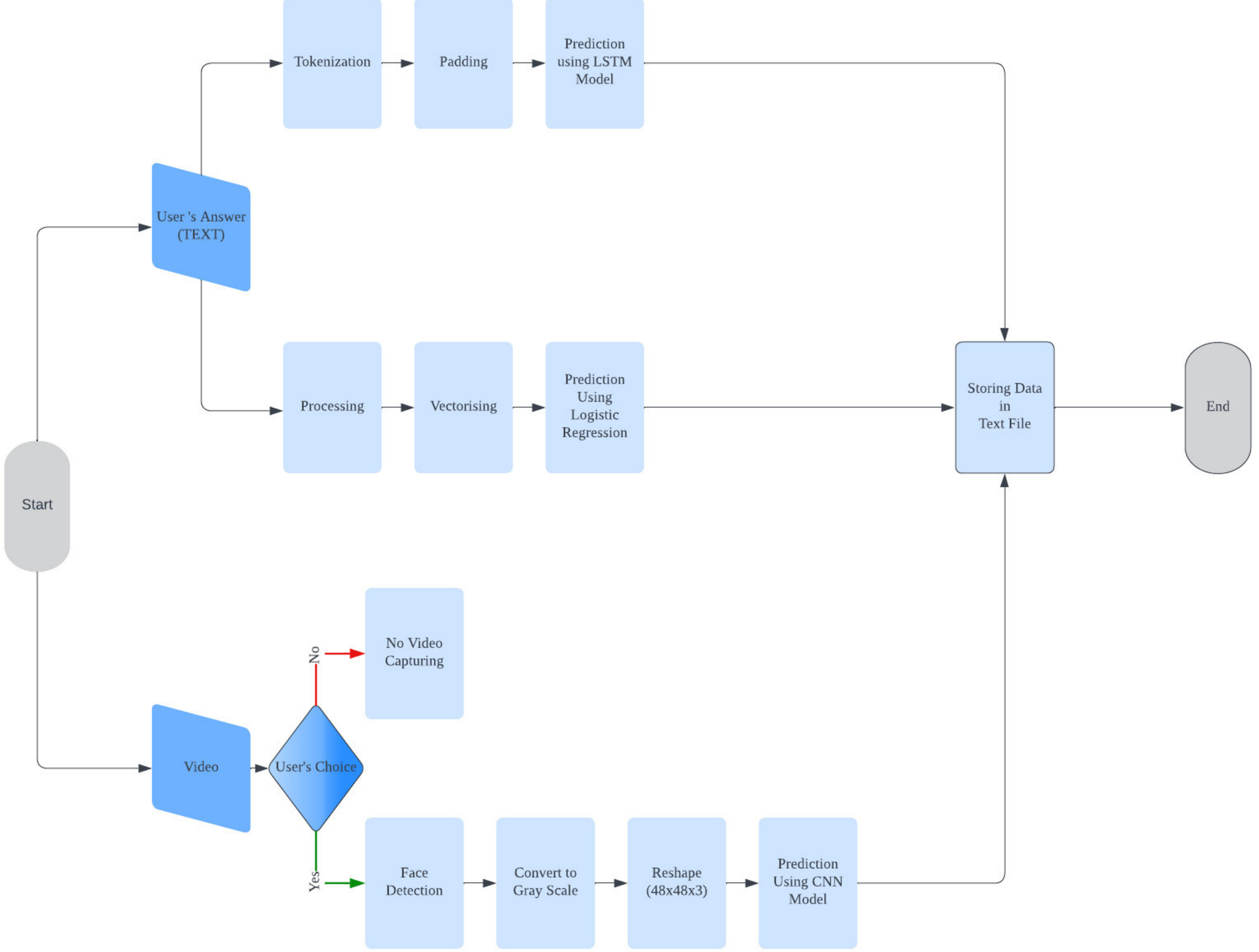
What did we build?

A live chatbot that takes input from the user. Three working models that take inputs. The motive is to determine whether the person is suffering from depression or a prevalent mental disorder. Our assistance will further help the patient connect to a verified psychologist.

Concepts Used

1. Logistic Regression
2. Convolution Neural Network (CNN)
3. Long Short-Term Memory

Diagrams and Visualizations


Tokenization
Padding
Prediction using LSTM Model
User 's Answer (TEXT)
Processing
Vectorising
Prediction Using Logistic Regression
Storing Data in Text File
End
Start
No
No Video Capturing
Video
User's Choice
Yes
Face Detection
Convert to Gray Scale
Reshape (48x48x3)
Prediction Using CNN Model

Data Pre-processing

The pre-processing techniques used in the following models:

CNN Model:

1. Rescaling
2. GRAY Scale Conversion
3. Face Detection

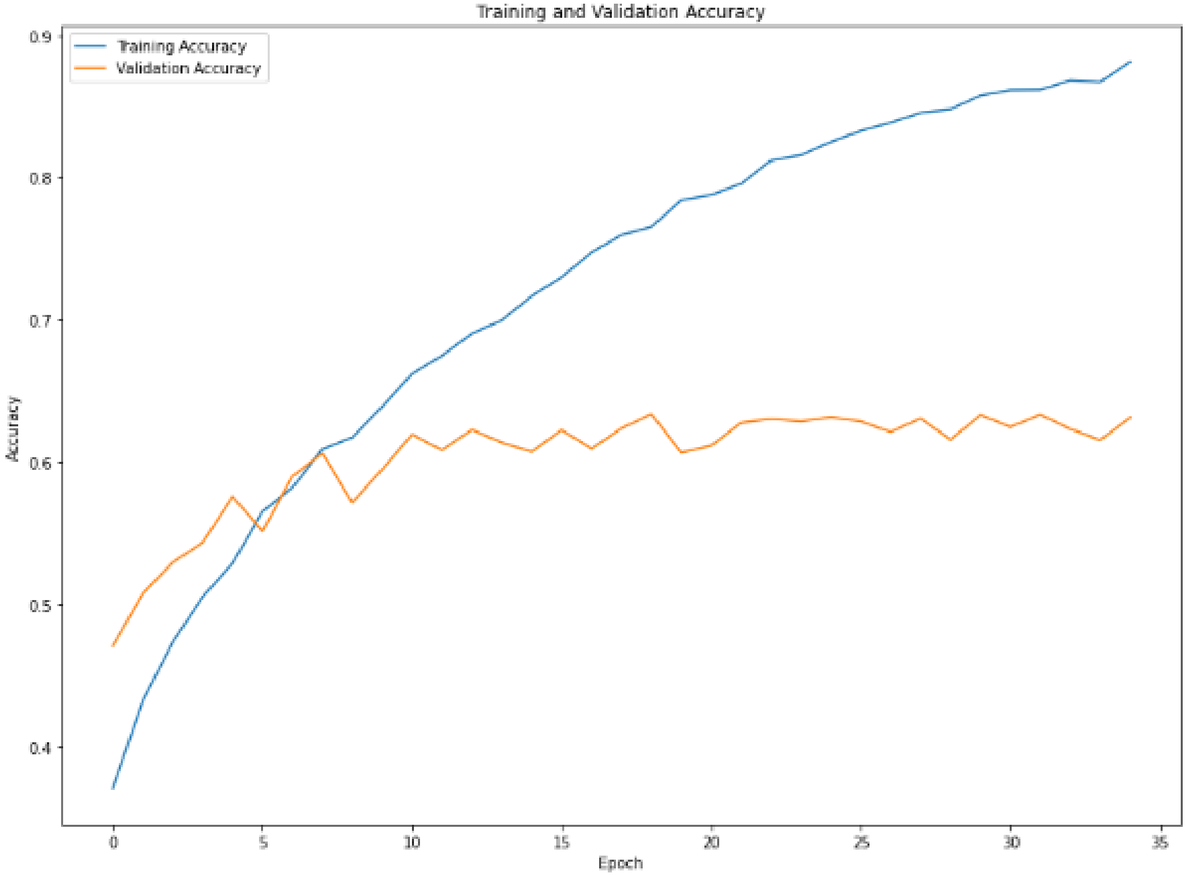
Logistic Regression:

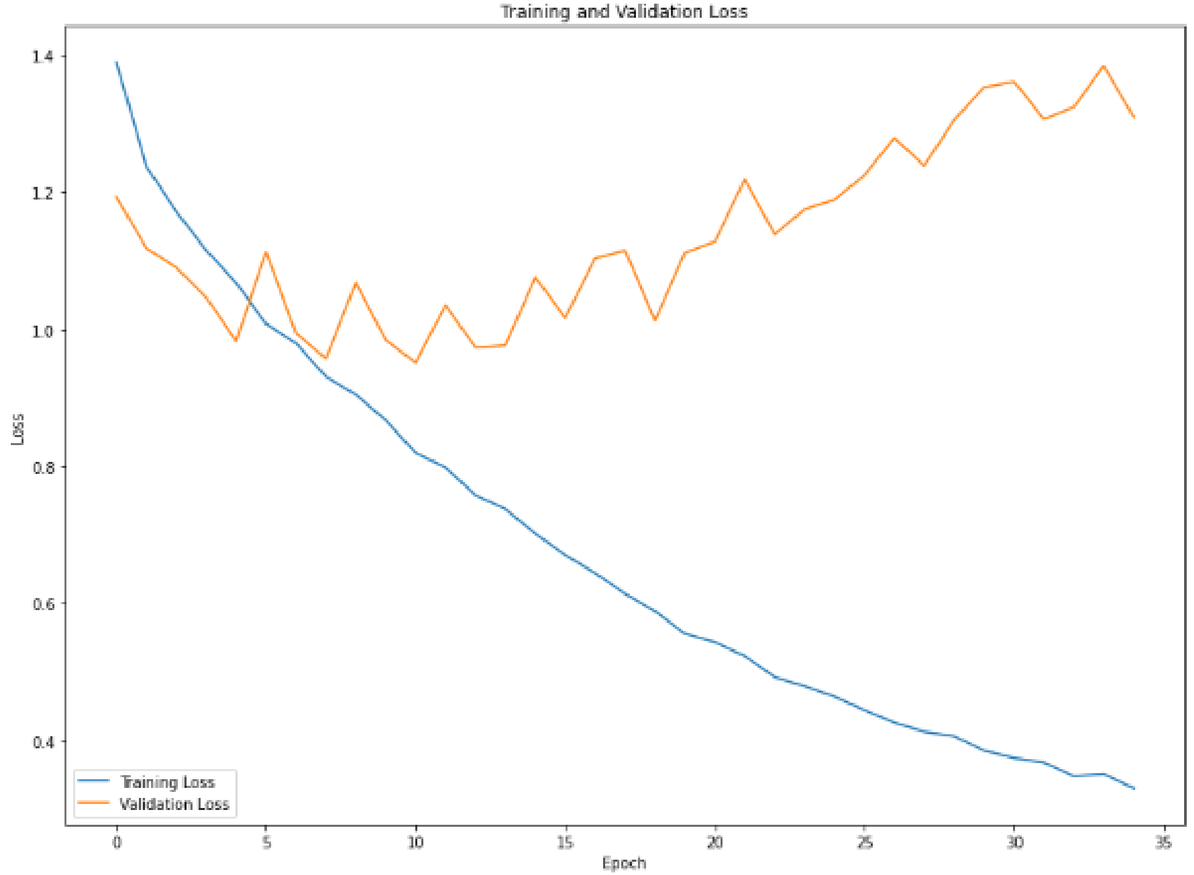
1. Data Cleaning.
2. Vectorization
3. Bow encoding and tagging

LSTM:

1. Tokenization
2. Padding.
3. Embedding

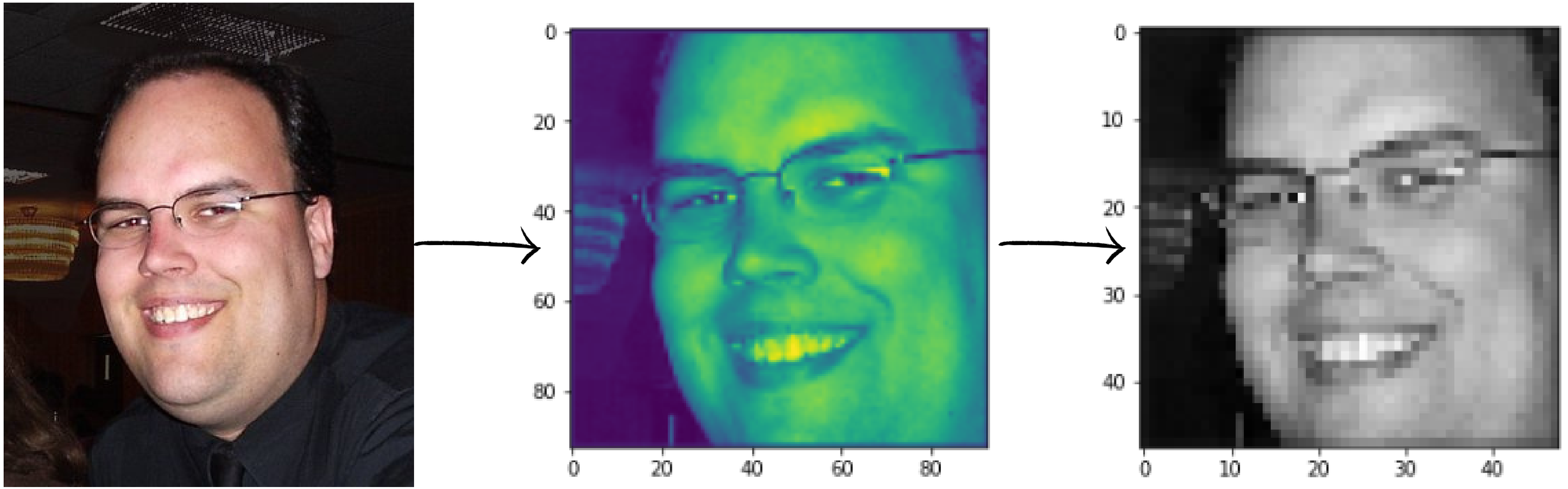
CNN Emotion detection





Training: 0.88

Testing: 0.64


0
20
40
60
80
0
20
40
60
80
0
10
20
30
40
0
10
20
30
40

Logistic Regression Model (Results)

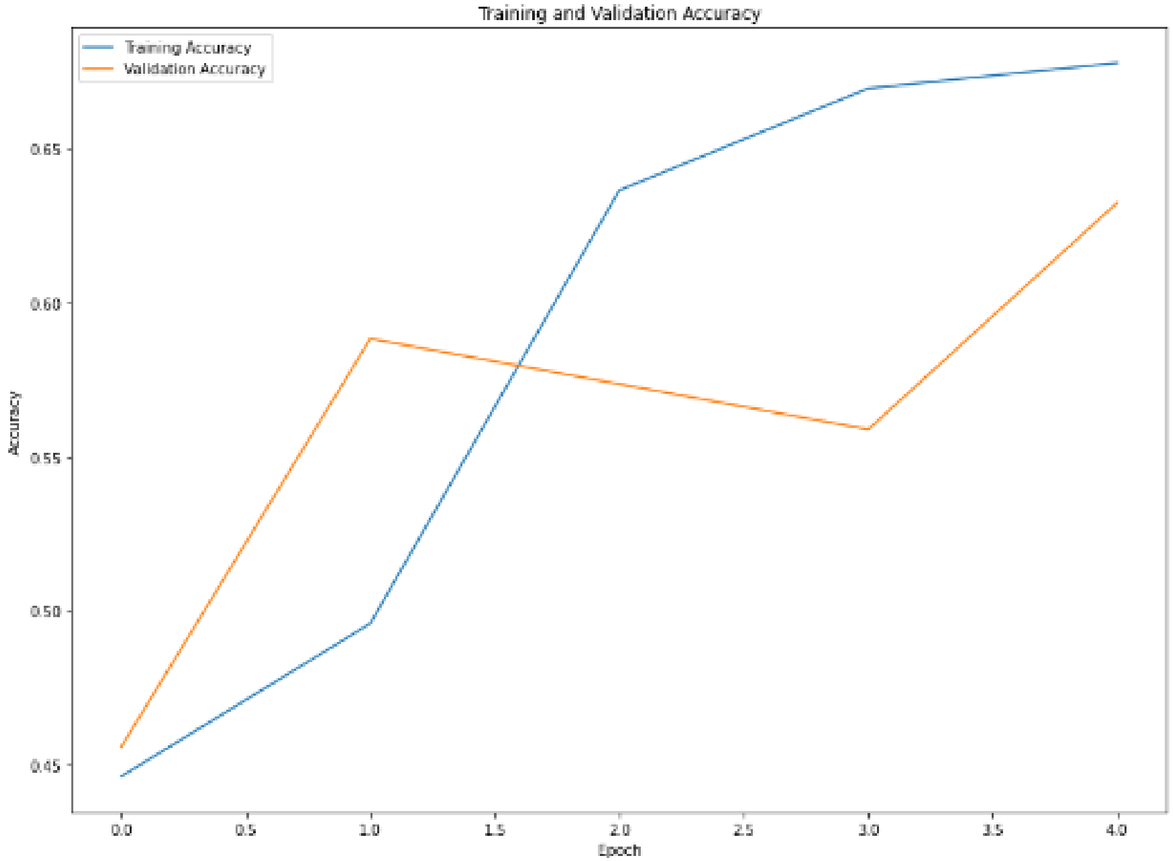
```
Confusion =
[[2122    9    3    0   25]
 [  14 1910    3    0   10]
 [   1    7 5321   22   11]
 [   2    0   31 1270    1]
 [  15   10    7    1 4633]]
```

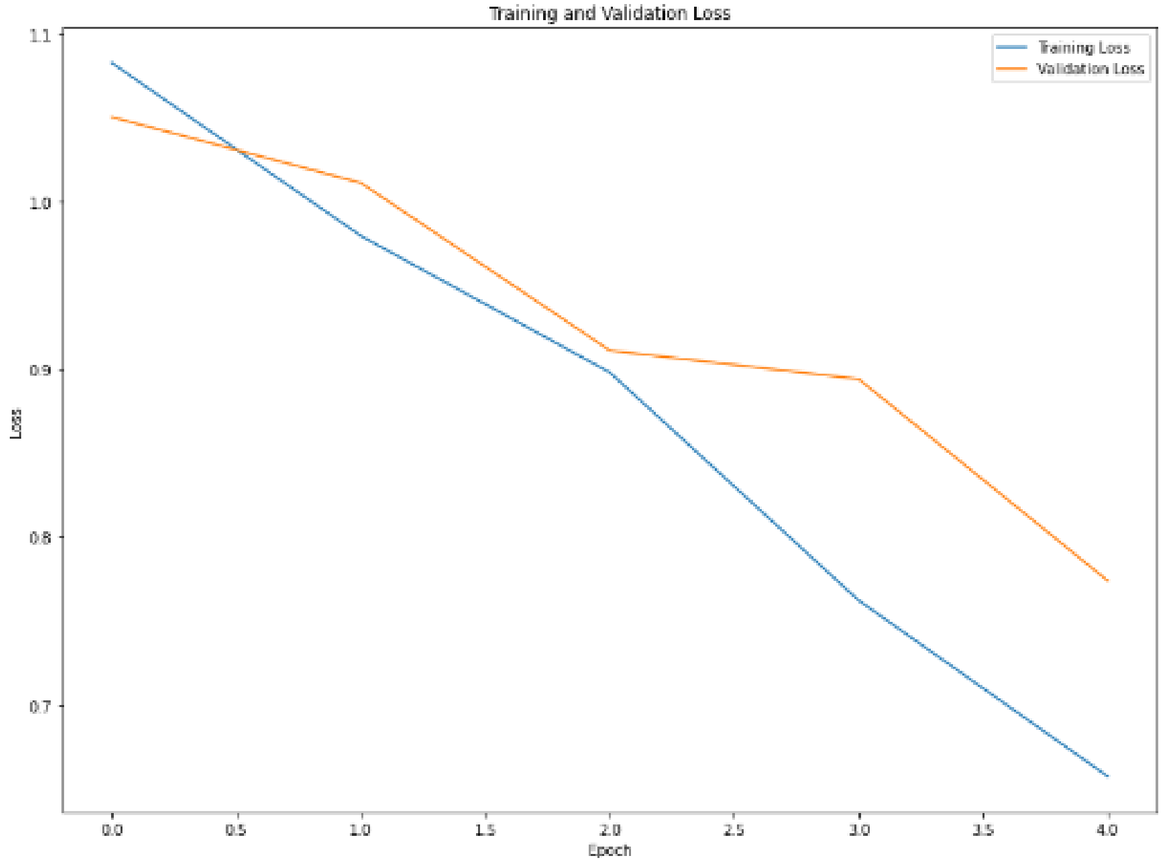
	precision	recall	f1-score	support
0	0.99	0.98	0.98	2159
1	0.99	0.99	0.99	1937
2	0.99	0.99	0.99	5362
3	0.98	0.97	0.98	1304
4	0.99	0.99	0.99	4666
accuracy			0.99	15428
macro avg	0.99	0.99	0.99	15428
weighted avg	0.99	0.99	0.99	15428

Training: 0.98

Testing: 0.90

Mental Health Detection





Training: 0.67

Testing: 0.60

Challenges faced

01 Defining and finding the dataset related to the problem statement. Unavailability of sufficient data.

02 Similarities between certain classes (Majorly related to facial expressions) Accuracy.

03 Issues concerned with accuracy.

Our Learnings

Deep Learning

Machine Learning

Deployment

CNN

RNN

Future Enhancements

01 Make it available in a plethora of languages to increase accessebility and usability

02 Create a network of psychologists and people practicing the same.

03 Increase the number of disorders/ complications that can be detected

Demo