

Equipo Reddy:

MOODY.AI

**Reconocimiento facial para la
detección de emociones.**



Equipo Reddy



PM



Tester + UI



Mentores



Científicos de datos

1. Problemática

El COVID-19 nos ha cambiado la vida.



Se ha borrado la barrera entre la vida laboral y personal.

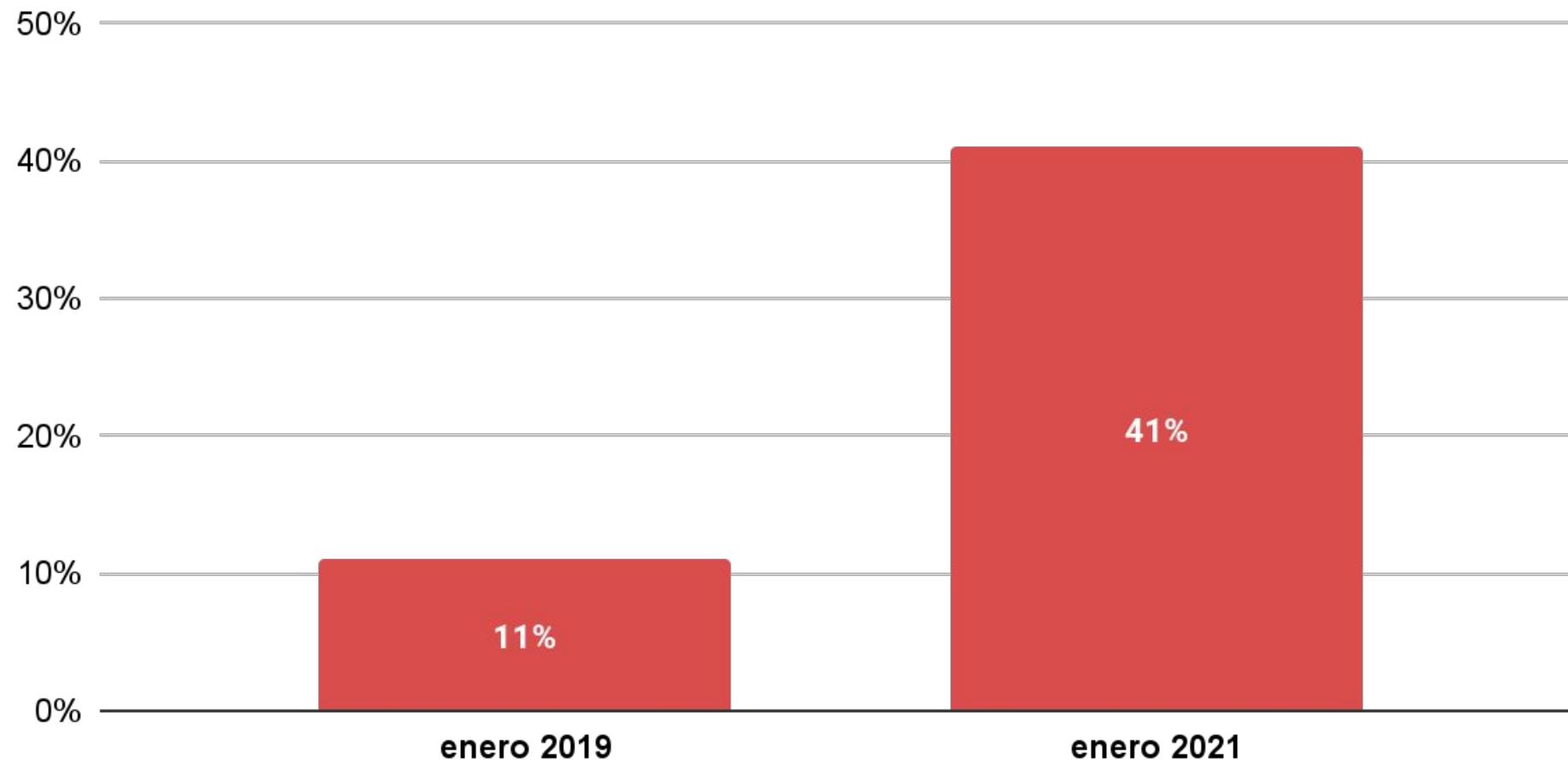
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- **Interacciones virtuales**
- **Ansiedad por confinamiento**
- **Jornadas largas de trabajo**
- **Distacciones**
- **Incertidumbre**



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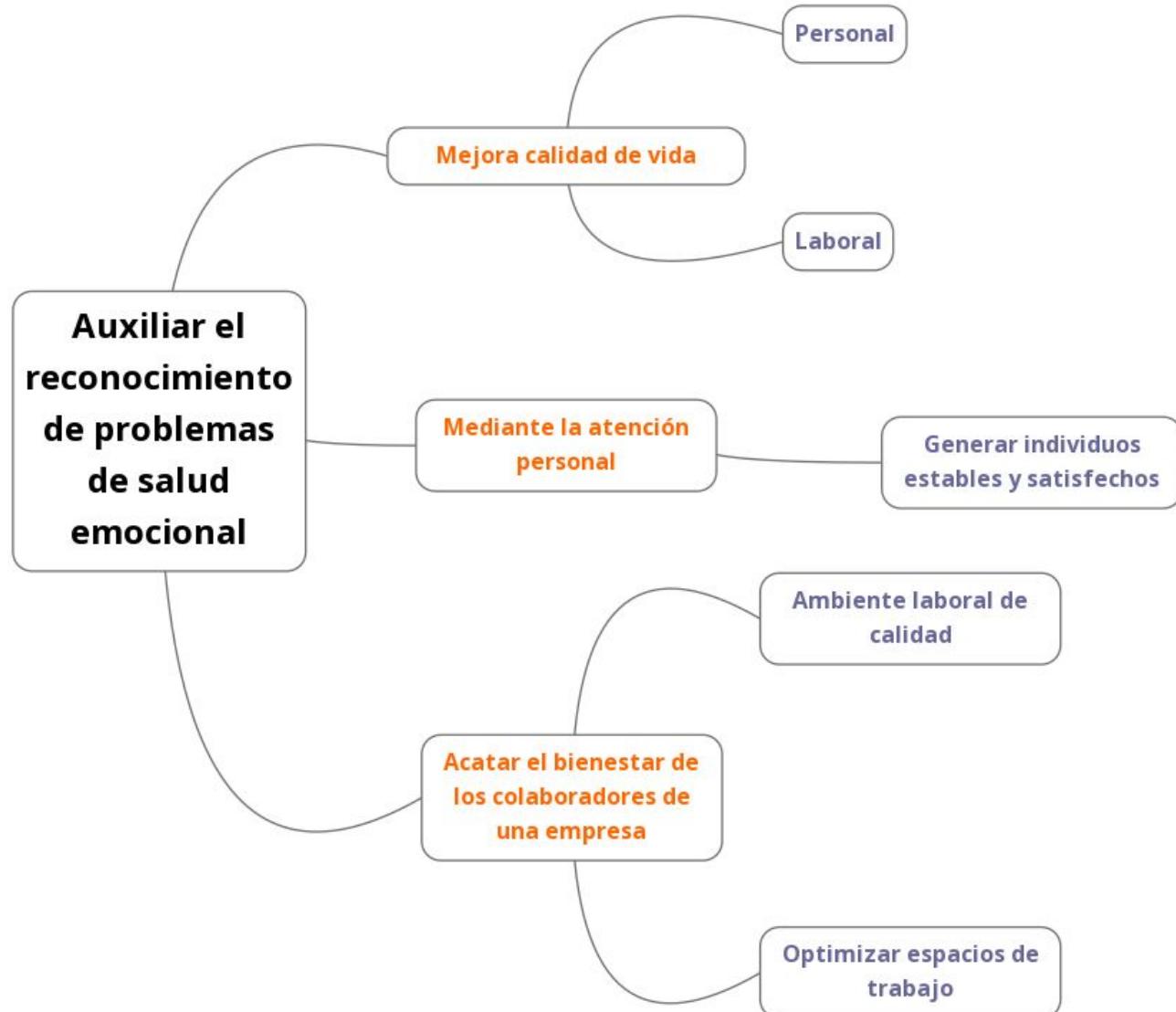
Porcentaje de adultos que reportaron síntomas de depresión y/o ansiedad



National Center for Health Statistics (NCHS) en Estados Unidos



2. Impacto social: NOM-35-STPS-2018



3. Nuestra propuesta:

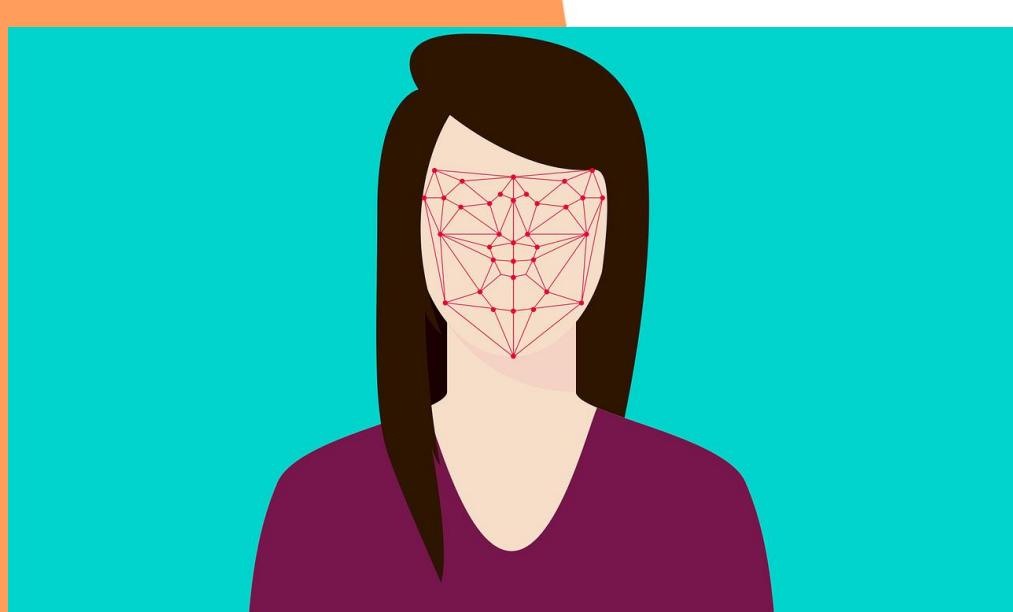


MOODY.AI

- Implementamos herramientas de reconocimiento facial para la detección de emociones negativas en tiempo real.



- Análisis y reconocimiento de imágenes
- Algoritmo de reconocimiento de emociones
- Énfasis en prevalencia de emociones negativas



1. Monitorear el bienestar de trabajadores
2. Dar seguimiento a las alertas
3. Atención emocional
→ mejorar rendimiento y satisfacción

4. Dataset

	emotion	pixels	Usage
0	0	70 80 82 72 58 58 60 63 54 58 60 48 89 115 121...	Training
1	0	151 150 147 155 148 133 111 140 170 174 182 15...	Training
2	2	231 212 156 164 174 138 161 173 182 200 106 38...	Training
3	4	24 32 36 30 32 23 19 20 30 41 21 22 32 34 21 1...	Training
4	6	4 0 0 0 0 0 0 0 0 0 3 15 23 28 48 50 58 84...	Training
5	2	55 55 55 55 55 54 60 68 54 85 151 163 170 179 ...	Training
6	4	20 17 19 21 25 38 42 42 46 54 56 62 63 66 82 1...	Training
7	3	77 78 79 79 78 75 60 55 47 48 58 73 77 79 57 5...	Training
8	3	85 84 90 121 101 102 133 153 153 169 177 189 1...	Training
9	2	255 254 255 254 254 179 122 107 95 124 149 150...	Training
10	0	30 24 21 23 25 25 49 67 84 103 120 125 130 139...	Training
11	6	39 75 78 58 58 45 49 48 103 156 81 45 41 38 49...	Training
12	6	219 213 206 202 209 217 216 215 219 218 223 23...	Training

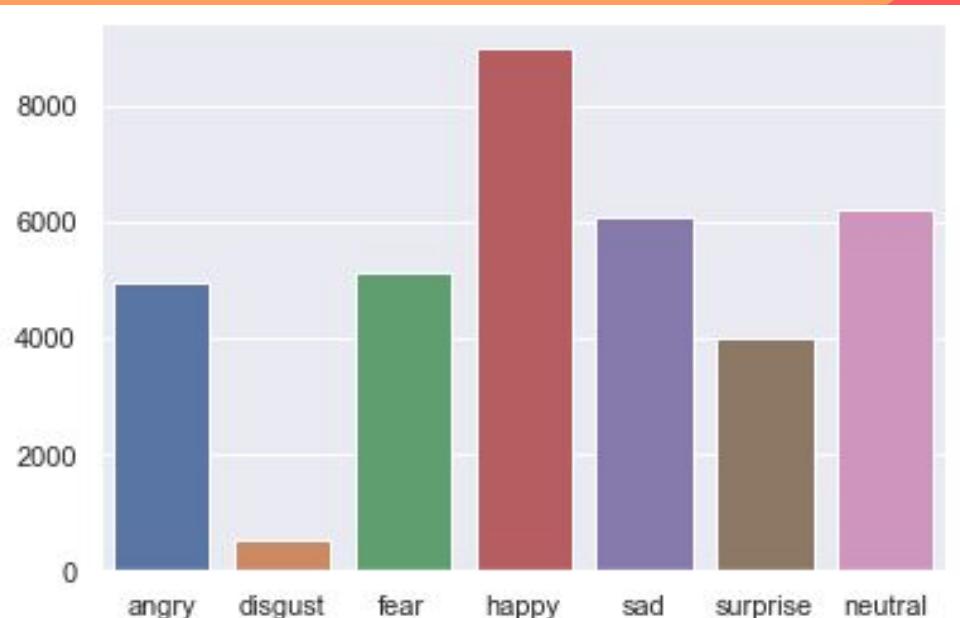
Clases:
0- Angry
1- Disgust
2- Fear
3- Happy
4- Sad
5- Surprise
6- Neutral

5. Dataset

```
In[2]:= RandomSample[ResourceData["FER-2013"], 25]
```



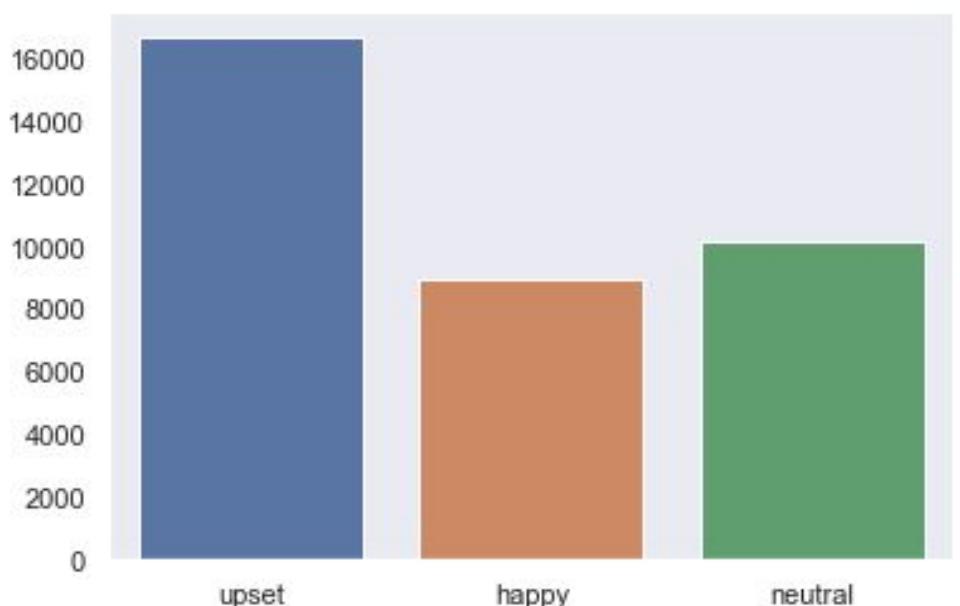
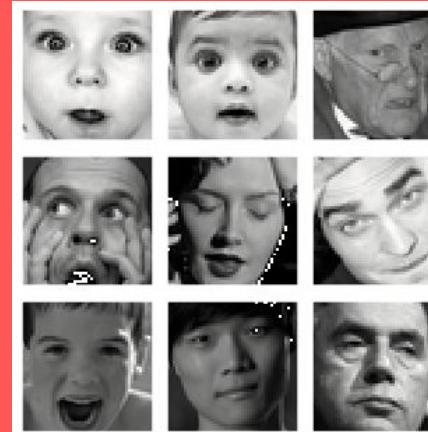
Out[2]=



Empezamos con niños...

Pero el dataset nos limitó.

Hay que notar que el dataset nos limita a cierto grupo poblacional.



6. He

```
model = Sequential(name='moodyNet')

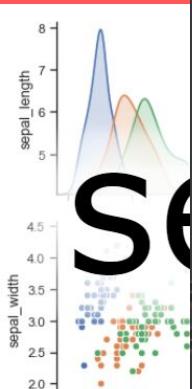
model.add(data_augmentation)
model.add(Conv2D(64, (5, 5), activation='relu', input_shape=(48, 48, 1))) # kernel_regularizer=l2(0.01)
model.add(Conv2D(64, (5, 5), padding='same', activation='relu'))

#home/israelch/Desktop/Relativity6/Repos/EmotionsDetector/training_SatAI_emotions1_3classes
model: Sequential = Sequential(name='moodyNet') ::

model.add(Dropout(0.5))

model.add(Conv2D(128, (3, 3), padding='same', activation='relu'))
# model.add(BatchNormalization())
model.add(Conv2D(128, (3, 3), padding='same', activation='relu'))
#model.add(BatchNormalization())
#model.add(Conv2D(128, (3, 3), padding='same', activation='relu'))
model.add(BatchNormalization())
model.add(MaxPooling2D(pool_size=(2,2)))
model.add(Dropout(0.5))

model.add(Conv2D(256, (3, 3), padding='same', activation='relu'))
#model.add(BatchNormalization())
model.add(Conv2D(256, (3, 3), padding='same', activation='relu'))
#model.add(BatchNormalization())
#model.add(Conv2D(256, (3, 3), padding='same', activation='relu'))
model.add(BatchNormalization())
model.add(MaxPooling2D(pool_size=(2,2)))
model.add(Dropout(0.5))
```



S

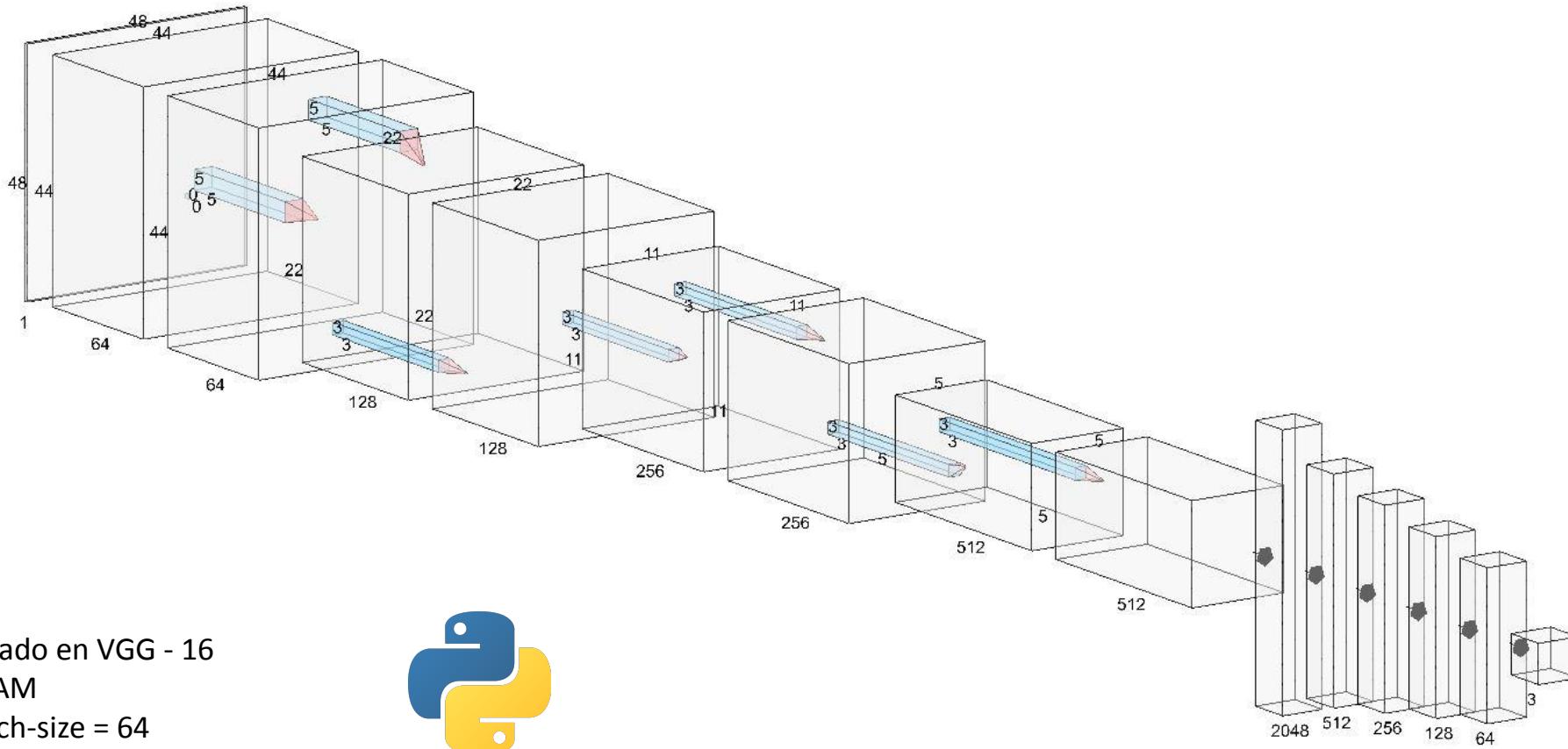
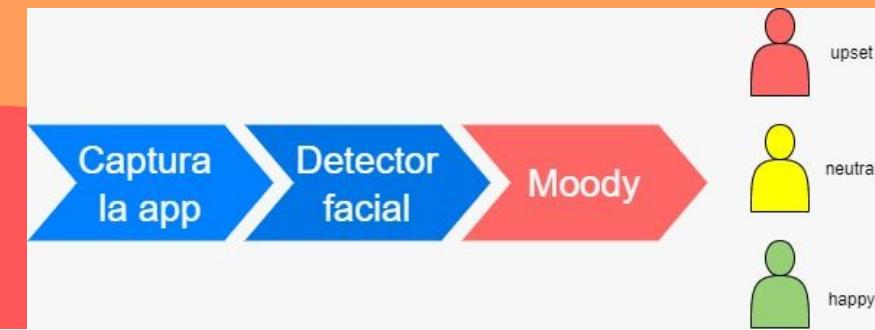


Tensor



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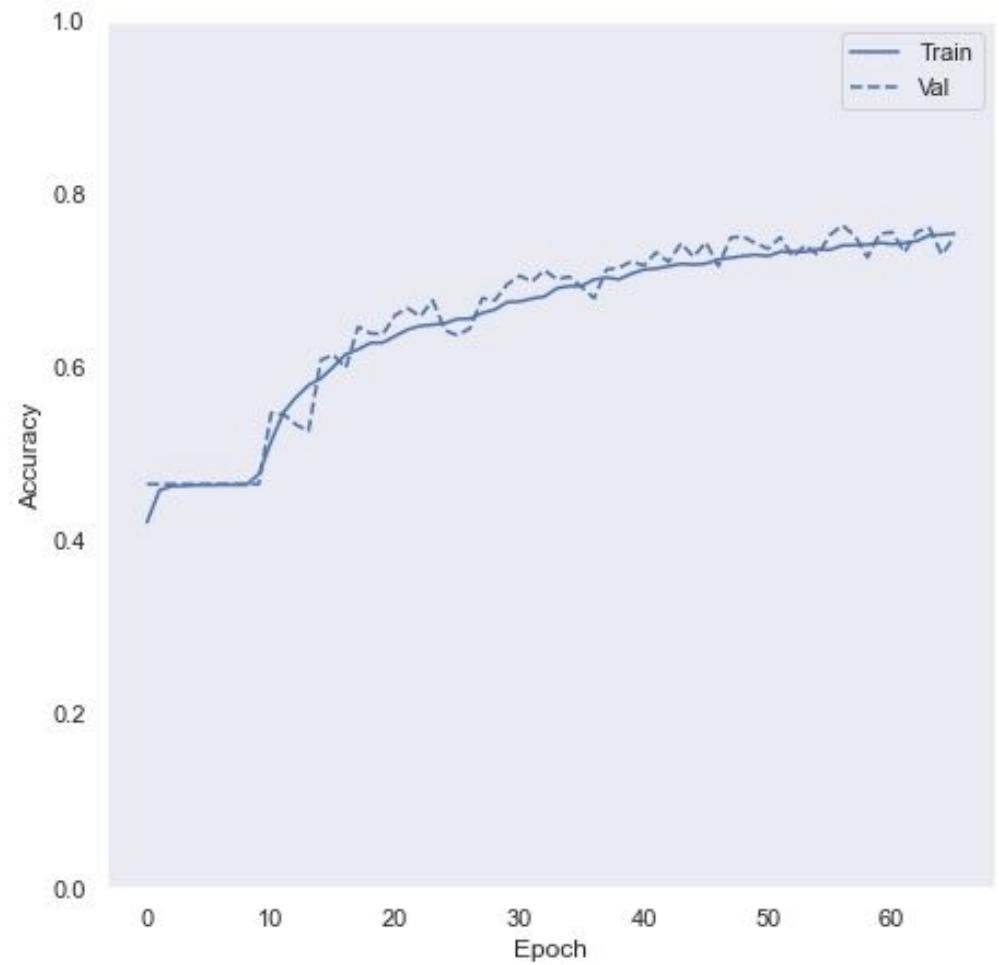
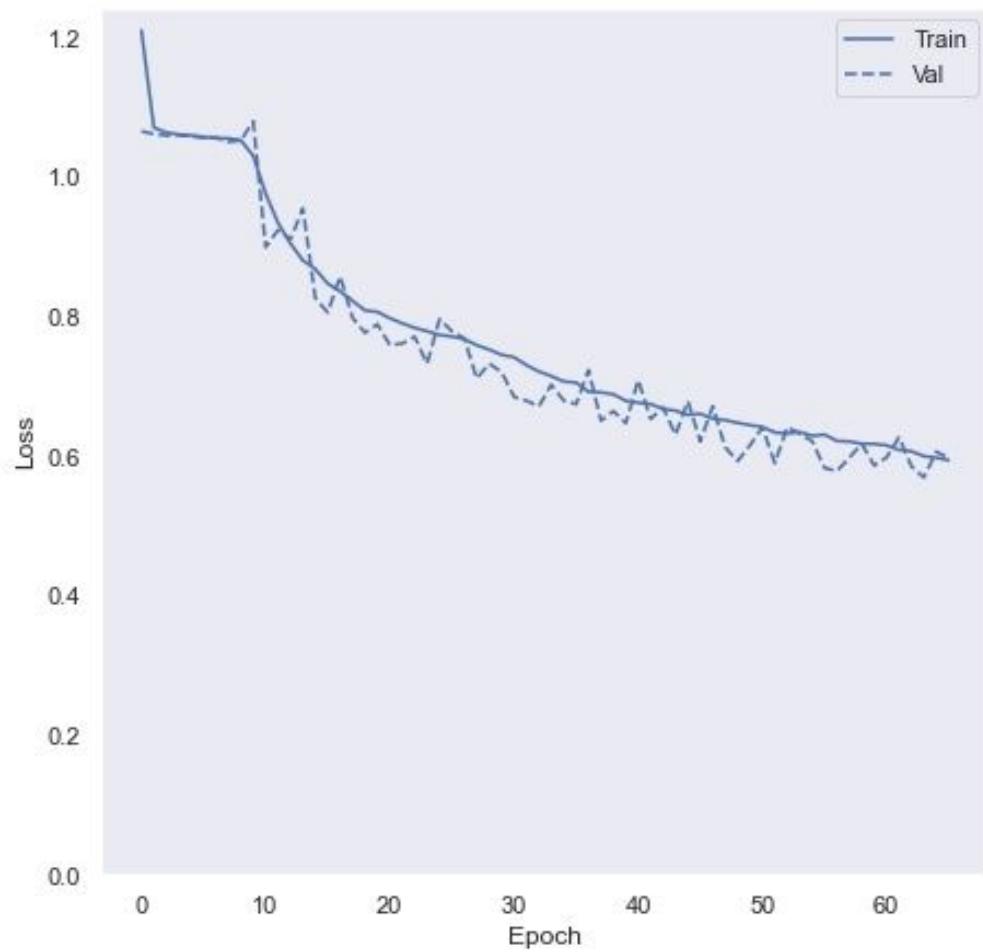
6. Modelo: moodyNet



Basado en VGG - 16
ADAM
Batch-size = 64
Learning Rate = 0.001



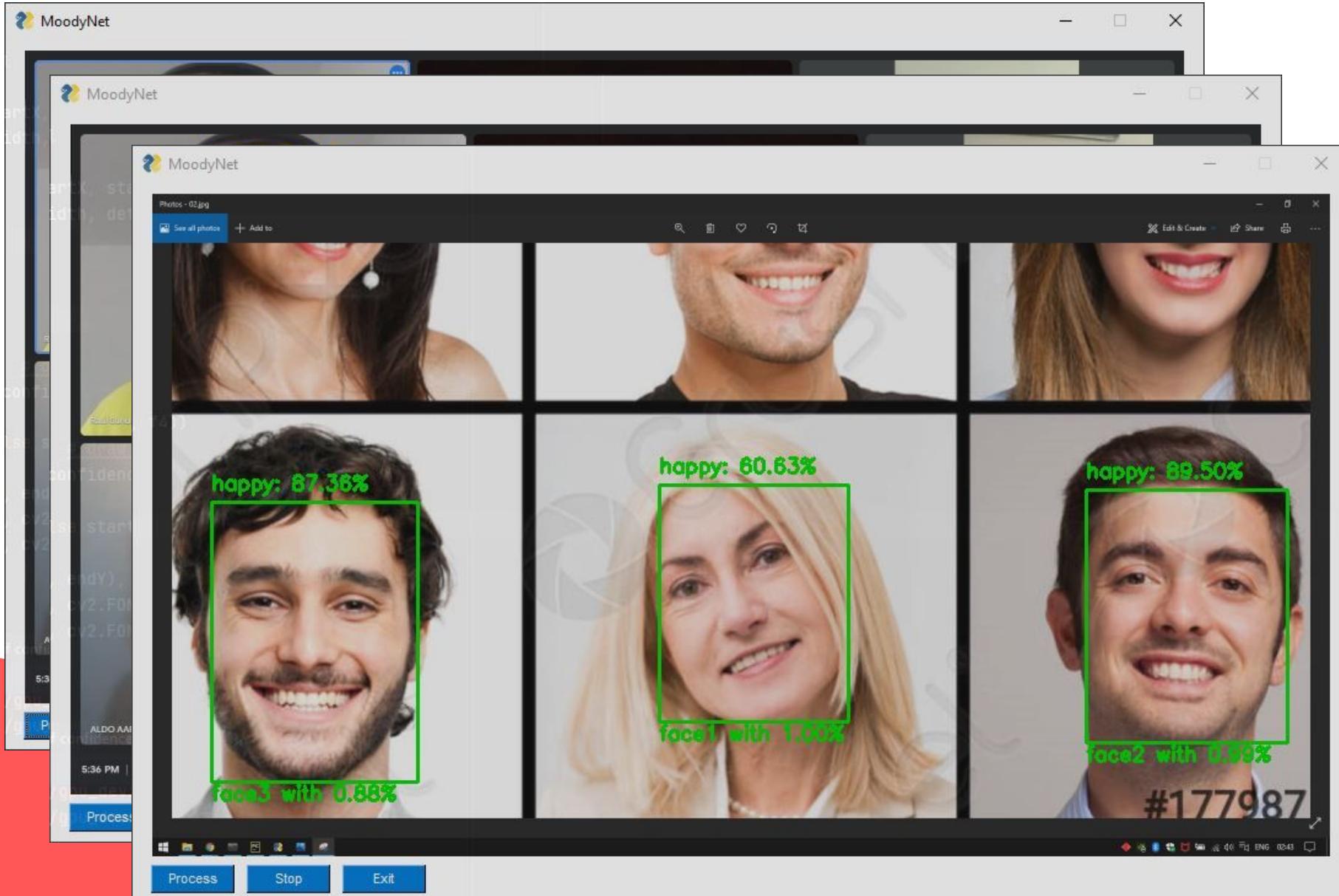
7. Resultados



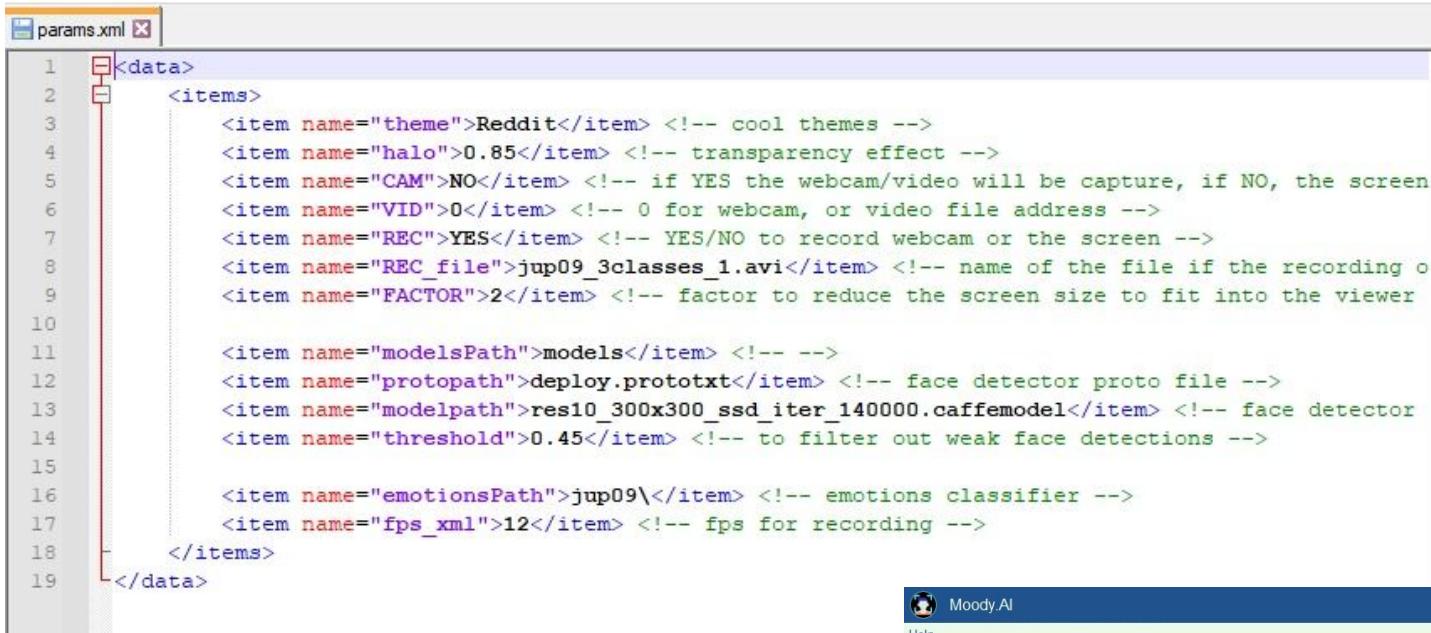
<https://github.com/chacoff/EmotionsDetector>

7. Resultados

<https://github.com/chacoff/EmotionsDetector>

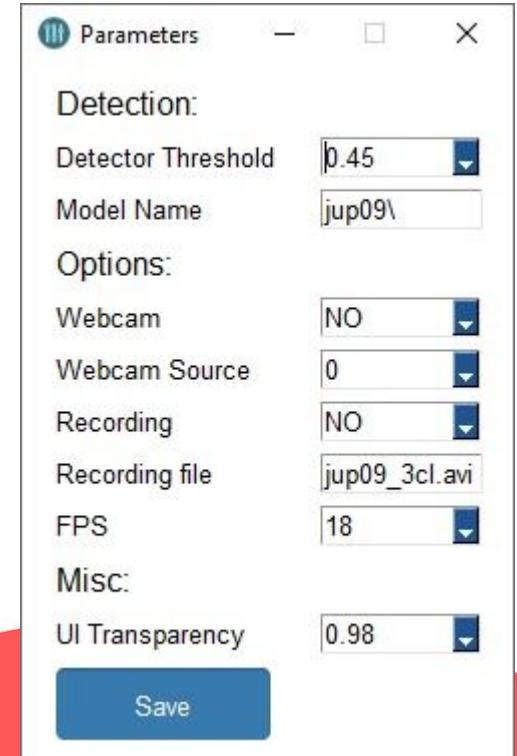


7. Resultados



The screenshot shows a code editor window with the file 'params.xml' open. The XML configuration defines various parameters for a Moody AI application:

```
1 <data>
2   <items>
3     <item name="theme">Reddit</item> <!-- cool themes -->
4     <item name="halo">0.85</item> <!-- transparency effect -->
5     <item name="CAM">NO</item> <!-- if YES the webcam/video will be capture, if NO, the screen
6     <item name="VID">0</item> <!-- 0 for webcam, or video file address -->
7     <item name="REC">YES</item> <!-- YES/NO to record webcam or the screen -->
8     <item name="REC_file">jup09_3classes_1.avi</item> <!-- name of the file if the recording o
9     <item name="FACTOR">2</item> <!-- factor to reduce the screen size to fit into the viewer
10
11    <item name="modelsPath">models</item> <!-- -->
12    <item name="protopath">deploy.prototxt</item> <!-- face detector proto file -->
13    <item name="modelpath">res10_300x300_ssd_iter_140000.caffemodel</item> <!-- face detector
14    <item name="threshold">0.45</item> <!-- to filter out weak face detections -->
15
16    <item name="emotionsPath">jup09\</item> <!-- emotions classifier -->
17    <item name="fps_xml">12</item> <!-- fps for recording -->
18
19  </items>
</data>
```



8. Proyección a futuro

