A picture containing application

Description automatically generated

**datagen**= ImageDataGenerator(rotation\_range=15,

                  width\_shift\_range=0.1,

                  height\_shift\_range=0.1,

                  horizontal\_flip=True,

                  vertical\_flip=True)

* rotation\_range en eje X
* fill\_mode = refect (espejo)
* Para espacios en negro
* fill\_mode = wrap rellena
* fill\_mode = nearest (elimina valores negros con los mas cercanos)
* width\_shift\_range hacia un lado
* height\_shift\_range hacia arriba, abajo
* brightness\_range
* zoom\_range de una seccion de la imagen

from tensorflow.keras.preprocessing.image

import ImageDataGenerator, array\_to\_img, img\_to\_array, load\_img

import matplotlib.pyplot as plt

datagen = ImageDataGenerator(rotation\_range=60,

width\_shift\_range=0.4,

height\_shift\_range=0.4,

zoom\_range=0.3,

horizontal\_flip=True,

fill\_mode='reflect',

brightness\_range=[0.3,1.4]

)

img = load\_img('Mara.jpeg')

x = img\_to\_array(img)

x = x.reshape((1,)+ x.shape)

i=0

for batch in datagen.flow(x, batch\_size=1):

plt.figure(i)

imgplot = plt.imshow(array\_to\_img(batch[0]))

i += 1

if i % 10 ==0:

break

plt.show()