

Abstract:

Age Detection is an automated age detection algorithm which detects age in this context child,young,middle_aged or old. This takes image as an input and gives an image as an output with a rectangle around the face in the image (face detection) along with a label describing the age category the person belongs to.

Dataset :

<https://www.kaggle.com/nipunarora8/age-gender-and-ethnicity-face-data-csv>

Model Used:

For Age Detection VGG16 model is used and for face extraction and face detection MTCNN is used.

Layers in Model:

Model: "model"

Layer (type)	Output Shape	Param #
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input_1 (InputLayer)	[(None, 48, 48, 3)]	0
block1_conv1 (Conv2D)	(None, 48, 48, 64)	1792
block1_conv2 (Conv2D)	(None, 48, 48, 64)	36928
block1_pool (MaxPooling2D)	(None, 24, 24, 64)	0
block2_conv1 (Conv2D)	(None, 24, 24, 128)	73856
block2_conv2 (Conv2D)	(None, 24, 24, 128)	147584
block2_pool (MaxPooling2D)	(None, 12, 12, 128)	0
block3_conv1 (Conv2D)	(None, 12, 12, 256)	295168
block3_conv2 (Conv2D)	(None, 12, 12, 256)	590080
block3_conv3 (Conv2D)	(None, 12, 12, 256)	590080
block3_pool (MaxPooling2D)	(None, 6, 6, 256)	0

block4_conv1 (Conv2D)	(None, 6, 6, 512)	1180160
block4_conv2 (Conv2D)	(None, 6, 6, 512)	2359808
block4_conv3 (Conv2D)	(None, 6, 6, 512)	2359808
block4_pool (MaxPooling2D)	(None, 3, 3, 512)	0
block5_conv1 (Conv2D)	(None, 3, 3, 512)	2359808
block5_conv2 (Conv2D)	(None, 3, 3, 512)	2359808
block5_conv3 (Conv2D)	(None, 3, 3, 512)	2359808
block5_pool (MaxPooling2D)	(None, 1, 1, 512)	0
global_average_pooling2d (Gl	(None, 512)	0
dense (Dense)	(None, 64)	32832
dropout (Dropout)	(None, 64)	0
dense_1 (Dense)	(None, 4)	260
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Total params: 14,747,780		
Trainable params: 33,092		

Final Model Loss:

1.1477551191976065

Accuracy Score:

57.5406%