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??
$x_1...x_n$
$w_1...w_n$
?
?
?
$200\times$
$200\times$
3
$200\times$
$200\times$
3
120000
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??
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Con-
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lay-
ers
$5\times$
5
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Pool-
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lay-
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?
$2\times$
2
MAX
??
Fully
con-
nected
layer
?
MAX
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?
?
file.pbtxt
file.pb
?
?
file.lite
?
?
?
?

??

160×160

240×240

320×320

??

$_t$arget.png $Example of input (left) and target (right) images used to train the CNN. Images produced with the credit card image$

??

Conv2d

Conv2d_1

Conv2d_2

Conv2d_3

Conv2d_8

Conv2d_2-8

relu

Conv2d_9

sig-moid

?

?
freeze_session()
freeze_graph.py
.pb
write_graph()
toco_convert()
.lite
Main-Ac-tiv-ity
??
Dis-play-Ac-tiv-ity
??
Stat-s-Ac-tiv-ity
??
Set-tings-Ac-tiv-ity
??
Cam-er-aAc-tiv-ity
pre-dic-tIm-age()
pre-dic-tIm-age()

$_DIM_X, IMAGE_DIM_Y, 1); infInterface.run(newString[]outputName, true); infInterface.fetch(outputName, (float[$
$SystemClock.uptimeMillis(); BitmapoutputImage =$
$convertFloatArrayToBitmap(outputData);$
pre-dic-tIm-age()
??
??

????
$\overline{x}$
σ
RSD
????
??
??

Samsung Galaxy S8 TF Mobile   TensorFlow Lite

	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)
160x160 px	*182,44*					
240x240 px	*410,12*					
320x320 px	*757,34*					

??
??
??

Samsung Galaxy S5 TF Mobile   TensorFlow Lite

	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)
160x160 px						
240x240 px						
320x320 px						

??
??
??

Samsung Galaxy S4 TF Mobile   TensorFlow Lite

	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)
160x160 px						
240x240 px						
320x320 px						

??
??
??

Moto G5 Plus TF Mobile   TensorFlow Lite

	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)	$\overline{x}$ (ms)	σ (ms)	RSD $\sigma/\overline{x}$ (%)
160x160 px						
240x240 px						
320x320 px						

??

	160x160 px	240x240 px	320x320 px
Moto G 5+			
Samsung S4			
Samsung S5			
Samsung S8			

	Android version	Ratio 160px	Ratio 240px	Ratio 320px
Moto G 5+	7.0			
Samsung S4	4.4.2			
Samsung S5	5.0.1			
Samsung S8	8.0			

```
tflite.run(inputData, outputData)
```