

R Notebook part 2

[Code ▾](#)[Hide](#)

```
library(pixmap)
library(gdata)
left1<-read.pnm(file="an2i_left_angry_open_4.pgm")
```

'x' is NULL so the result will be NULL

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```
plot(left1)
```

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```
left1.matrix<-left1@grey
left1
```

Pixmap image

```
  Type      : pixmapGrey
  Size      : 30x32
  Resolution : 1x1
  Bounding box : 0 0 32 30
```

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```
left1.vector<-unmatrix(left1.matrix,byrow=T)
left1.frame<-data.frame(left1.vector)
left1.frame
```

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```
dim(left1.frame)
```

```
[1] 960  1
```

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```
library(neuralnet)
myform <- as.formula(paste('class1.label ~ ',paste(names(training.set[!names(training.set) %in% 'class1.label']), collapse = ' + ')))
face.classifier <- neuralnet(myform, training.set, hidden = 9, rep=100, linear.output = FALSE, threshold = 0.1)
summary(face.classifier)
```

	Length	Class	Mode
call	7	-none-	call
response	60	-none-	numeric
covariate	57600	-none-	numeric
model.list	2	-none-	list
err.fct	1	-none-	function
act.fct	1	-none-	function
linear.output	1	-none-	logical
data	961	data.frame	list
net.result	100	-none-	list
weights	100	-none-	list
startweights	100	-none-	list
generalized.weights	100	-none-	list
result.matrix	866200	-none-	numeric

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```
class.index<-length(test.set)
face.prediction<-compute(face.classifier,test.set[,~class.index])
face.prediction$net.result
```

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```
#if(face.prediction$net.result >0.33 && face.prediction$net.result < 0.66){
#classifications<-ifelse(face.prediction$net.result<0.66,0,1)
#}

classifications<-ifelse(face.prediction$net.result>0.02,
                        (ifelse(face.prediction$net.result<0.95,0,
                                (ifelse(face.prediction$net.result<0.1,-1,1)))),-1)

classifications
```

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```
table(test.set[,class.index],classifications)
```

```
classifications
-1  0  1
-1 28  0  0
 0 31  3  0
 1  4  6 18
```

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```
face.4.3.classifier <- neuralnet(myform, training.set, hidden = 9, rep=100, linear.output = FALSE, threshold = 0.1)
face.prediction<-compute(face.4.3.classifier,test.set[,~class.index])
face.prediction$net.result
```

```
      [,1]
image.vector 0.9977406239944
i.vector     0.9969926609872
i.vector.5   0.9939111284839
i.vector.6   0.9964831701998
i.vector.9   0.9951963600062
i.vector.11  0.9968973913912
i.vector.12  0.9985721365012
i.vector.13  0.9984934826177
```

i.vector.15 0.6352837011942
i.vector.16 0.0154791346893
i.vector.17 0.5972469235778
i.vector.18 0.0162244600095
i.vector.20 0.0076363396860
i.vector.21 0.6064511555511
i.vector.22 0.0078036595049
i.vector.26 0.9995960124208
i.vector.27 0.9989441328719
i.vector.28 0.9989851975267
i.vector.29 0.9997018051499
i.vector.31 0.9975071139753
i.vector.33 0.9972096402561
i.vector.34 0.9993427269477
i.vector.35 0.9954169682689
i.vector.36 0.9987432943363
i.vector.40 0.7057277308674
i.vector.41 0.8813340464536
i.vector.45 0.9878569835032
i.vector.46 0.1076960136395
i.vector1 0.0049626962544
i.vector.210 0.0050721884377
i.vector.310 0.0050646005361
i.vector.49 0.0054960987508
i.vector.61 0.0049778073469
i.vector.71 0.0049027061525
i.vector.101 0.0048983076432
i.vector.141 0.0048986584678
i.vector.151 0.0002636893307
i.vector.161 0.0048710954541
i.vector.181 0.0040600101345
i.vector.191 0.0002394491402
i.vector.201 0.0048979135084
i.vector.211 0.0002407843679
i.vector.221 0.0048652350552
i.vector.251 0.0048974234539
i.vector.291 0.0049010402523
i.vector.301 0.0048975901066
i.vector.321 0.0048977280344
i.vector.361 0.0048976350427
i.vector.371 0.0048976830584
i.vector.391 0.0048975154198
i.vector.401 0.0048975294058
i.vector.411 0.0048975052369
i.vector.421 0.0048971307523
i.vector.431 0.0048975047471
i.vector.451 0.0048975250226
i.vector.481 0.0089772237854
i.vector.112 0.1164252847334
i.vector.410 0.0033015806602
i.vector.72 0.0090554323405
i.vector.82 0.0049727686486
i.vector.102 0.0049594187717
i.vector.122 0.0180545014778
i.vector.132 0.0060236315300
i.vector.142 0.0070317652963
i.vector.152 0.0051180414374
i.vector.162 0.0057950739185
i.vector.172 0.0052180695009
i.vector.192 0.0050149524994
i.vector.202 0.0068902678511
i.vector.222 0.0066730131860
i.vector.232 0.0198039377967
i.vector.242 0.0126922705327
i.vector.262 0.0198549931910
i.vector.272 0.0110909002516
i.vector.282 0.0108585570801
i.vector.292 0.0323855885277
i.vector.302 0.0124390324378
i.vector.313 0.0026229034593
i.vector.322 0.0052739138212
i.vector.332 0.0034924225115

```
i.vector.342 0.0051081641589
i.vector.362 0.0051945089755
i.vector.372 0.0045560501938
i.vector.382 0.0051912507000
i.vector.402 0.0986198906980
i.vector.422 0.0177394403567
i.vector.432 0.0097010601920
i.vector.442 0.0138986777670
i.vector.452 0.0002630570163
i.vector.462 0.0046192758918
```

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```
classifications<-ifelse(face.prediction$net.result>0.02,
                        (ifelse(face.prediction$net.result<0.95,0,
                                (ifelse(face.prediction$net.result<0.1,-1,1))))),-1)

classifications
```

```
      [,1]
image.vector      1
i.vector          1
i.vector.5        1
i.vector.6        1
i.vector.9        1
i.vector.11       1
i.vector.12       1
i.vector.13       1
i.vector.15       0
i.vector.16      -1
i.vector.17       0
i.vector.18      -1
i.vector.20      -1
i.vector.21       0
i.vector.22      -1
i.vector.26       1
i.vector.27       1
i.vector.28       1
i.vector.29       1
i.vector.31       1
i.vector.33       1
i.vector.34       1
i.vector.35       1
i.vector.36       1
i.vector.40       0
i.vector.41       0
i.vector.45       1
i.vector.46       0
i.vector1        -1
i.vector.210     -1
i.vector.310     -1
i.vector.49      -1
i.vector.61      -1
i.vector.71      -1
i.vector.101     -1
i.vector.141     -1
i.vector.151     -1
i.vector.161     -1
i.vector.181     -1
i.vector.191     -1
i.vector.201     -1
i.vector.211     -1
i.vector.221     -1
i.vector.251     -1
i.vector.291     -1
i.vector.301     -1
i.vector.321     -1
i.vector.361     -1
i.vector.371     -1
i.vector.391     -1
i.vector.401     -1
i.vector.411     -1
i.vector.421     -1
```

```
i.vector.431 -1
i.vector.451 -1
i.vector.481 -1
i.vector.112 0
i.vector.410 -1
i.vector.72 -1
i.vector.82 -1
i.vector.102 -1
i.vector.122 -1
i.vector.132 -1
i.vector.142 -1
i.vector.152 -1
i.vector.162 -1
i.vector.172 -1
i.vector.192 -1
i.vector.202 -1
i.vector.222 -1
i.vector.232 -1
i.vector.242 -1
i.vector.262 -1
i.vector.272 -1
i.vector.282 -1
i.vector.292 0
i.vector.302 -1
i.vector.313 -1
i.vector.322 -1
i.vector.332 -1
i.vector.342 -1
i.vector.362 -1
i.vector.372 -1
i.vector.382 -1
i.vector.402 0
i.vector.422 -1
i.vector.432 -1
i.vector.442 -1
i.vector.452 -1
i.vector.462 -1
```

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```
table(test.set[,class.index],classifications)
```

```
classifications
-1  0  1
-1 28  0  0
 0 31  3  0
 1  4  6 18
```
