

MATH 4322 Final Project Group 9

Neural Network Model

```
library(readr)
cardio_train <- read_delim("cardio_train.csv",
                           delim = ";", escape_double = FALSE, trim_ws = TRUE)
```

Rows: 70000 Columns: 13

-- Column specification -----

Delimiter: ";"

dbl (13): id, age, gender, height, weight, ap_hi, ap_lo, cholesterol, gluc, ...

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show_col_types = FALSE` to quiet this message.

```
cardio_train$gender = as.factor(cardio_train$gender)
cardio_train$cholesterol = as.factor(cardio_train$cholesterol)
cardio_train$gluc = as.factor(cardio_train$gluc)
cardio_train$smoke = as.factor(cardio_train$smoke)
cardio_train$alco = as.factor(cardio_train$alco)
cardio_train$active = as.factor(cardio_train$active)
cardio_train$cardio = as.factor(cardio_train$cardio)
```

```
library(neuralnet)
library(NeuralNetTools)
library(nnet)
```

```
#Import dataset RestaurantTips
attach(cardio_train)
```

```
#Train the model based on output from input
model = nnet(cardio ~ . -gender -id,
data = cardio_train,
size = 5,
rang = 0.1,
decay = 5e-2,
maxit = 5000)
```

```
# weights: 71
initial value 48656.992738
final value 48520.290433
converged
```

```
print(model)
```

```
a 12-5-1 network with 71 weights
inputs: age height weight ap_hi ap_lo cholesterol2 cholesterol3 gluc2 gluc3 smoke1 alco1 act.
output(s): cardio
options were - entropy fitting decay=0.05
```