Contents

1

2

121R2R39kk101112RCPU

3

3.1

3.2

3.3

Tom M.Mitchell

3.3.1

3.3.2

3.3.3

3.3.4 1.4

3.3.5 1.5

1.

   (a)

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

2.

(a)

(b) k

3.4 1.6 R

`http://cran.r-project.org/web/views/MachineLearning.html`

```
install.packages("RWeka")
install.packages("RWeka",lib="path/to/library")
?install.packages
```

librarypackagelibrary

3.5

4 2

4.1 2.1 R

R

4.2 2.2

```
subject_name<-c("John Doe","Jane Doe","Steve Graves")
temperature<-c(98.1,98.6,101.4)
flu_statusM<-c(FALSE,FALSE,TRUE)
```

R1[]

```
temperature[2]
temperature[2:3]
temperature[-2]
temperature[c(TRUE,TRUE,FALSE)]
```

4.3 2.3

Rfactor factor

```
gender<-factor(c("MALE","FAMALE","MALE"))
```

```
blood<-factor(c("O","AB","A"),
levels=c("A","B","AB","O"))
blood
```

4.3.1

```
subject1<-list(fullnane=subject_name[1],
temperature=temperature[1],
flu_status=flu_status[1],
gender=gender[1],
blood=blood[1])
subjec1
```

```
subjec1[2]
subjec1$temperature
subjec1[c("temperature","flu_status")]
```

4.3.2 2.3.2

```
pt_data<-data.frame(subjec_name,
temperature,flu_status,gender,blood,stringsASFactots=FALSE)
pt_data
pt_data$subject_name
pt_data("temperature","flu_status")
```

R

```
pt_data[1,2]
pt_data[c(1,3),c(2,4)]
pt_data[,1]
pt_data[1,]
pt_data[,]
pt_data[c(1,3),c("temperature","gender")]
pt_data[c(1,3),c(-1,-3,-5)]
```

4.3.3 2.3.3

```
m<-matrix(c("a","b","c","d"),nrow=2)
m

m<-matrix(c("a","b","c","d"),ncol=2)
m
```

R

```
m<-matrix(c("a","b","c","d","e","f"),nrow=2)
m

m<-matrix(c("a","b","c","d","e","f"),ncol=2)
m

m[1,]
m[,1]
```

array

4.4 2.4 R

4.4.1 2.4.1 R

```
save(x,y,z,file="mydata.RData")
load("mydata.RDdata")
```

Rsave.image.RDataRRRR

4.4.2 2.4.2 CSV

Microsoft Excel Comma-Separated ValueCSV

```
pt_data<-read.csv("pt_data.csv",stringsASFactots=FALSE)
mydata<-read.csv("mydata.csv",stringsASFactots=FALSE,header=FALSE)
```

read.csvread.tableread.tableTab-SeparatedValueTSV

```
write.csv(pt_data,file="pt_data.csv")
```

4.4.3 2.4.3 SQL

ODBC SQLOpen Database ConnectivityODBCStructured QueryLanguageSQLOracleMySQLPostgreSQLMicrosoft SQLSQLiteBrian RipleyRODBCR

```
install.packages("RODBC")
library(RODBC)
mydb<-odbcConnect("my_dsn")
mydb<-odbcConnect("my_dsn",uid="my_username",
pwd="my_password")
```

sqlQuerySQL

```
patient_query<-"select * from patient_data where alive=1"
patient_data<-sqlQuery(channel=mydb,query=patient_query)

odbcCloses(mydb)
```