

rnn: Recurrent Neural Network architectures
in native R

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Abstract

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1 About package rnn in R

Writing several lines of code:

```
library(rnn)
```

These are all the exported functions:

```
ls("package:rnn")

## [1] "bin2int"          "epoch_annealing"  "epoch_print"
## [4] "int2bin"          "loss_L1"          "predictr"
## [7] "run.finance_demo" "run.rnn_demo"     "trainr"
```

and now including the non-exported:

```
ls(getNamespace("rnn"), all.names=TRUE)
```

```
## [1] "__NAMESPACE__"      "__S3MethodsTable__" ".packageName"
## [4] "b2i"                "backprop_gru"       "backprop_lstm"
## [7] "backprop_r"         "backprop_rnn"       "bin2int"
## [10] "clean_lstm"         "clean_r"             "clean_rnn"
## [13] "epoch_annealing"    "epoch_print"         "i2b"
```

```
## [16] "init_gru"          "init_lstm"        "init_r"
## [19] "init_rnn"          "int2bin"           "loss_L1"
## [22] "predict_gru"        "predict_lstm"      "predict_rnn"
## [25] "predictr"           "run.finance_demo"  "run.rnn_demo"
## [28] "trainr"             "update_adagrad"    "update_r"
## [31] "update_sgd"
```

2 Internals

We can show the code of a function as such (note that we can just remove them and add their definitions to the example code):

```
int2bin

## function(integer, length=8) {
##   t(sapply(integer, i2b, length=length))
## }
## <bytecode: 0x55e487ec7a10>
## <environment: namespace:rnn>
```

Acknowledgments

We gratefully acknowledge support from ...

A This is the first appendix section

A.1 A subsection

A.1.1 A subsubsection

some text