drnen-report

L3P3

Monday, 24 November, 2014

This document summarizes the last approach taken to include resource awareness in the node aware elastic net. This last iteration adds a column to each input matrix for each measured resource, consisting in the difference between a value and its previous one. The whole process of model creation is described in the file "drnen-whole.R", found in the private L3P3 Github repository. The models are exported in a variable called "models_sc", which is a list of all the combinations of nodes and events in the system, containing each one the best created model for each event.

```
require(ggplot2)
```

```
## Loading required package: ggplot2
```

```
load('models_sc.Rdata')
```

Our objective is now to study the performance of this models. To do so, we're going to create a matrix where the rows are the system nodes and the columns are the events that happened on the system. The coefficients of the matrix will be the f-score of each model in each node.

Let's now extract some insightful analytics.

- First, let's see how many models were correctly created and how many models failed to create:

```
## [1] "Possible models:" "1335"
```

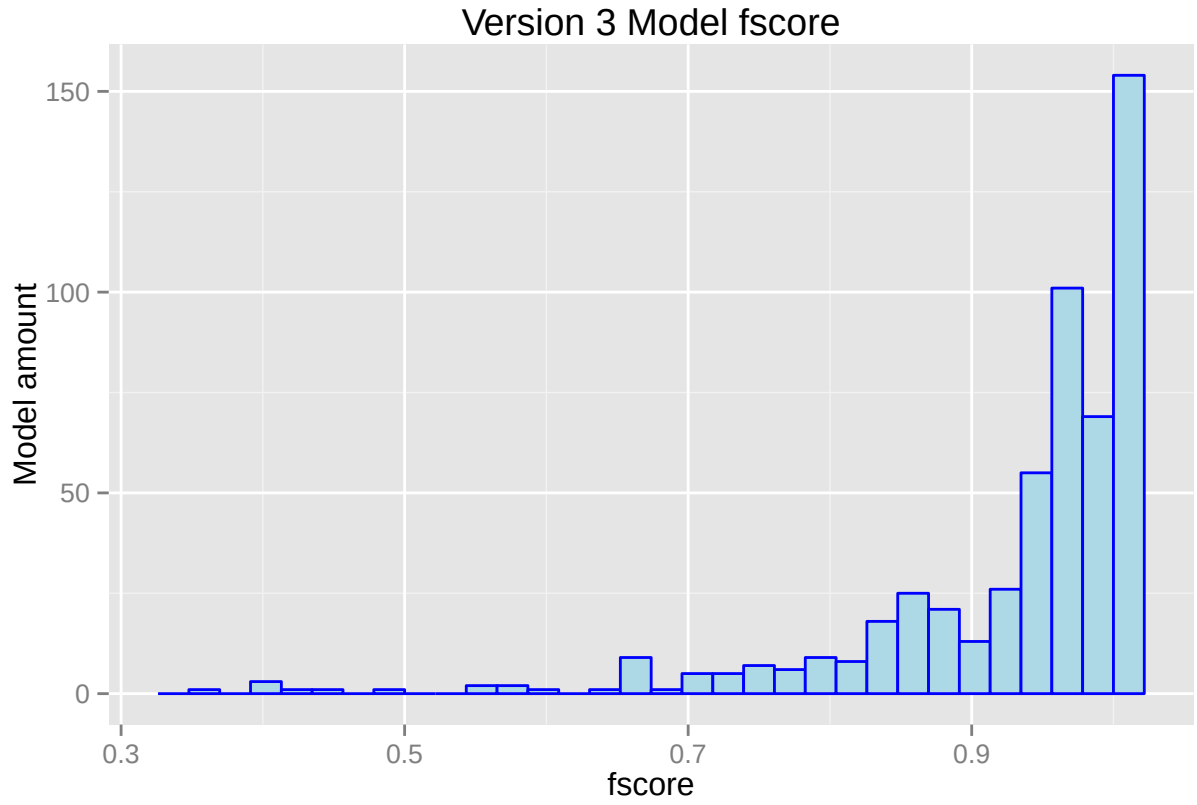
```
## [1] "Created models:" "545"
```

```
## [1] "Failed models:" "790"
```

The percentage of created models is a 42%. A logical result, as each model has now far fewer data to train.

- Now, we'll study obtained fscores in the 563 correctly created models:

```
## stat_bin: binwidth defaulted to range/30. Use 'binwidth = x' to adjust this.
```



The histogram shows good results for the models that actually work. A 75.7798165% (413 models) is at least 0.9 and a 91.3761468% (498 models) is at least 0.8. The average obtained fscore of the created models is 0.9292601, a slightly lower amount compared to the one found in the previous iteration. These models are hugely simpler than those, though, which makes still a feasible option in deployment.

- Lastly, we will study which critical events were correctly modelled and their fscore. There are three different critical events on the system, which we will study separately:
  - 96731154: this event indicates a critical threshold violation. It only appears in two nodes.

```
## fwpeuib02.sceu.corp fwpeuid02.sceu.corp
##                   0                   0
```

```
* 68917: this event's message points that a device hast stopped responding to external requests and/or p
```

```
##        aswpeuib02.sceu.corp        aswpeuib04.sceu.corp
##                   0.0000000                   0.0000000
##        aswpeuid01.sceu.corp        aswpeuid02.sceu.corp
##                   0.0000000                   0.0000000
##        aswpeuid03.sceu.corp        aswpeuid04.sceu.corp
##                   1.0000000                   0.0000000
##        aswpeuin01.sceu.corp        aswpeuin02.sceu.corp
##                   0.0000000                   0.0000000
##        aswpeuin03.sceu.corp        aswpeuin06.sceu.corp
##                   0.0000000                   0.0000000
##        aswpeuin08.sceu.corp        aswpeuin09.sceu.corp
```

```
##                   0.0000000                   0.0000000
##        aswpeuin10.sceu.corp        aswpeuin12.sceu.corp
##                   0.9600000                   0.0000000
##        ASWPEUIN13.sceu.corp        ASWPEUIN19.sceu.corp
##                   0.0000000                   0.9729730
## dnsrespeuin02-adm.sceu.corp        dswpeuin01.sceu.corp
##                   0.0000000                   0.0000000
##        dswpeuin02.sceu.corp        dswpeuin03.sceu.corp
##                   0.9333333                   0.0000000
##        dswpeuin04.sceu.corp        dswpeuwt01.sceu.corp
##                   0.0000000                   0.0000000
##        dswpeuwt02.sceu.corp        dswpeuwt03.sceu.corp
##                   0.0000000                   0.0000000
##        dswpeuwt04.sceu.corp         fwpeuid02.sceu.corp
##                   0.0000000                   0.0000000
```

A total of 26 models are created, out of which 4 were correctly created, this is, a 15.3846154%, with an average fscore of 0.9665766 and a standard deviation of 0.0138636.

```
* 69481:this event's message poitns that a whole chassis has stopped responding to polls. While it is g
```

```
## aswpeuib02.sceu.corp aswpeuib04.sceu.corp aswpeuid01.sceu.corp
##            0.0000000            0.0000000            0.0000000
## aswpeuid02.sceu.corp aswpeuid03.sceu.corp aswpeuid04.sceu.corp
##            1.0000000            0.0000000            0.0000000
## aswpeuin01.sceu.corp aswpeuin02.sceu.corp aswpeuin03.sceu.corp
##            0.0000000            0.0000000            1.0000000
## aswpeuin06.sceu.corp aswpeuin08.sceu.corp aswpeuin10.sceu.corp
##            0.0000000            0.0000000            1.0000000
## aswpeuin12.sceu.corp ASWPEUIN13.sceu.corp ASWPEUIN19.sceu.corp
##            0.0000000            0.0000000            0.0000000
## dswpeuin01.sceu.corp dswpeuin02.sceu.corp dswpeuin03.sceu.corp
##            0.0000000            0.9803922            0.0000000
## dswpeuin04.sceu.corp dswpeuwt01.sceu.corp dswpeuwt02.sceu.corp
##            1.0000000            0.9787234            0.9787234
## dswpeuwt03.sceu.corp dswpeuwt04.sceu.corp
##            0.0000000            0.0000000
```

A total of 23 models are created, out of which 7 were correctly created, this is, a 30.4347826%, with an average fscore of 0.9911199 and a standard deviation of 0.0055447.

The next step we will take will be to add resource consumption information to the models.