ROOT R
A TMVA Interface

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Mentors

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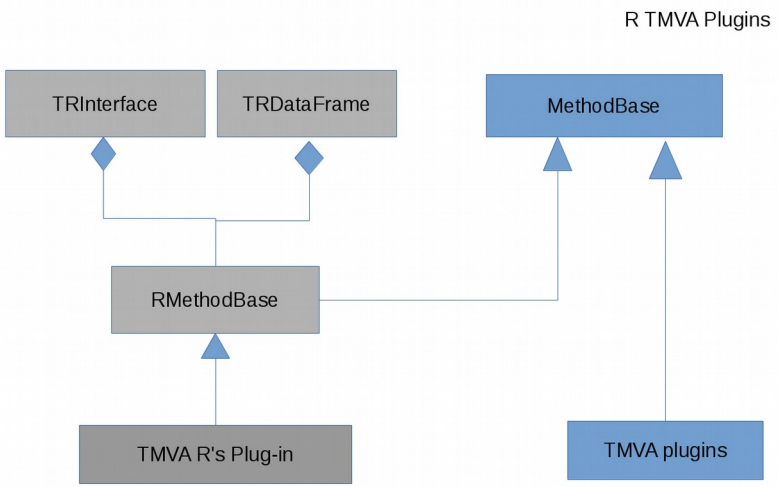
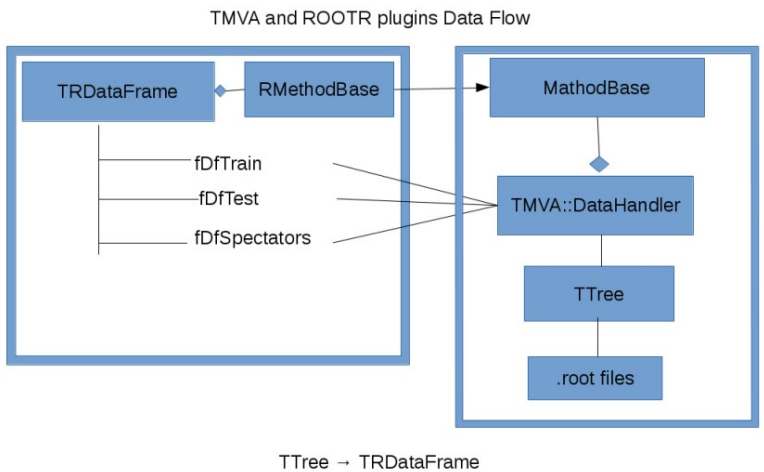
RMVA (R TMVA)

RMVA is a set of plugins for TMVA package based on ROOTR that consist in a set of classes that engage TMVA in a little intrusive way and allows new methods of classification and regression calling R's packages.





R packages for plugins

- **Boosted decision tree** (Package C50)

  Description: Fit classification tree models or rule-based models using Quinlan's C5.0 algorithm.

  Website:http://cran.r-project.org/web/packages/C50/index.html

- **Neural networks**(Package RSNNS)

  Description: The Stuttgart Neural Network Simulator (SNNS) is a library containing many standard implementations of neural networks..

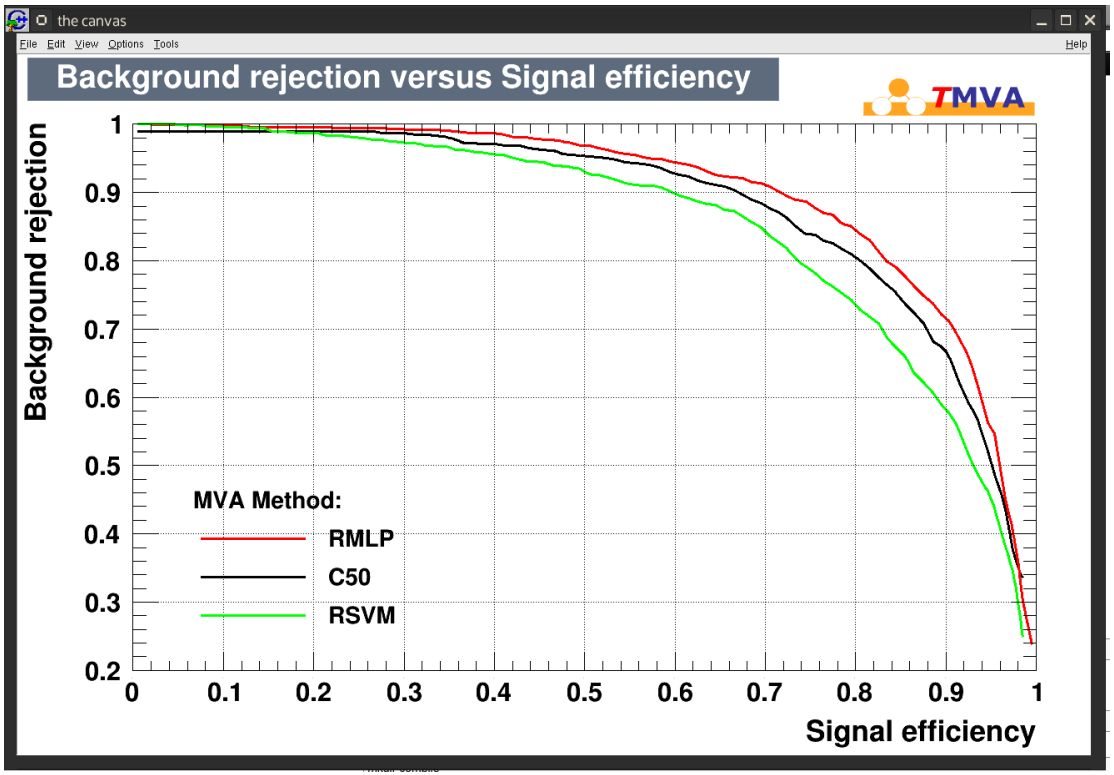
  Website:http://cran.r-project.org/web/packages/RSNNS/index.html

- **Support vector machine** (Package e1071)

  Description: svm is used to train a support vector machine. It can be used to carry out general regression and classification (of nu and epsilon-type), as well as density-estimation.

  Website: http://cran.r-project.org/web/packages/e1071/index.html

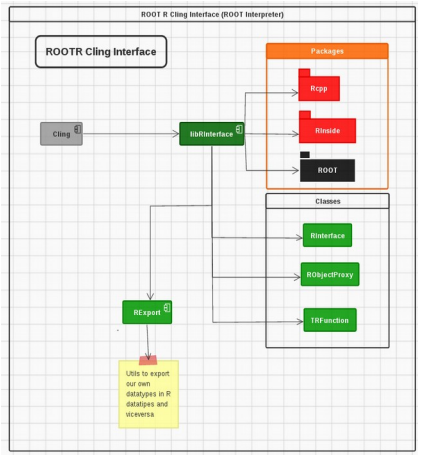
Results



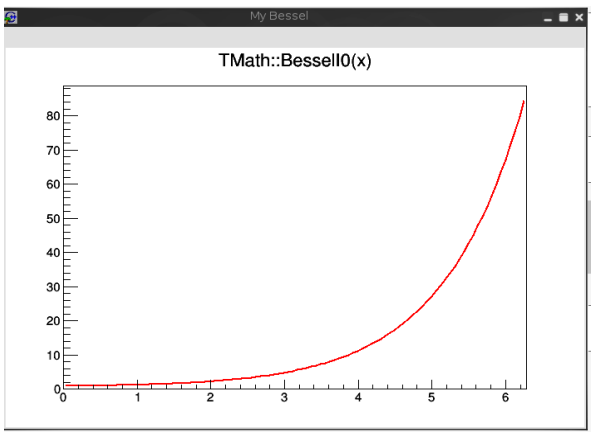
Evaluation results ranked by best signal efficiency and purity (area)

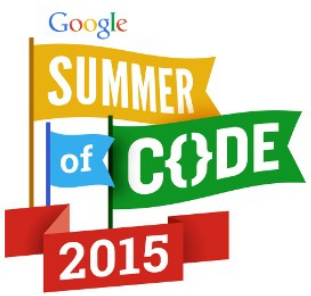
MVA Method:	Signal efficiency at bkg eff.(error): @B=0.01	@B=0.10	@B=0.30	ROC-integ.	Separation:	Significance:
RMLP	0.354(08)	0.718(08)	0.908(05)	0.902	0.505	1.347
C50	0.000(00)	0.671(08)	0.878(05)	0.881	0.462	1.253
RSVM	0.154(06)	0.597(08)	0.829(06)	0.853	0.377	1.049

More Information



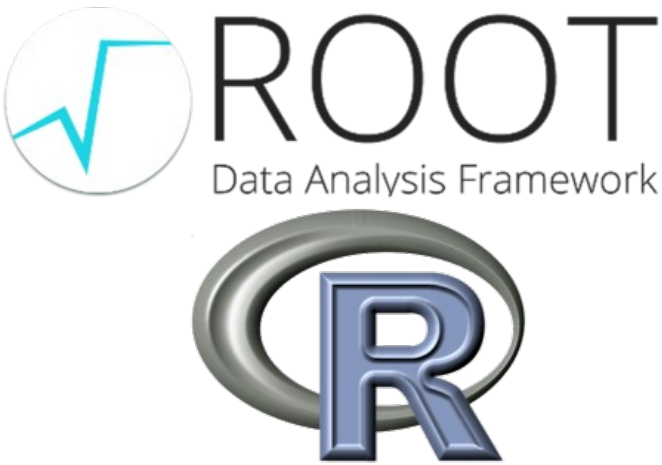

```
require(ROOT)

cl    <- TCanvas('cl','My Bessel')
bessel<- TF1('bessel','TMath::BesselI0(x)')
bessel$SetRange(0,2*pi)
bessel$Draw('') #plotting with ROOT's graphics system
cl$Update()
```





Websites

http://oproject.org/RMVA

http://oproject.org/GSoC+2015

Thanks