

PS10

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Model	OOS F1	OOS Gmean	Model Specific Parameters
Tree	.8892894	.6314273	minsplit = .25, minbucket = 38, cp = .0562
Logit	.8633508	.000000	lambda = .887, alpha = .544
Neural Network	0.9051716	0.7597503	size=6, decay=0.427, maxit = 1000
kNN	0.9175022	0.7955342	k=30
SVM			kernel = .25, cost = 1024, gamma = 2
Naive Byaes	.88228196	.7342159	na

*** I've tried running the svm about twenty times and 5 different ways and I get the error that any of the numbers from the specified vector are not feasible. So I submitted my final code without the kernel param specified. That way it will at least run the hyper parameters command... but it freezes every time before the iterations.

F1 score = harmonic mean of precision and recall = $2/(1/\text{recall} + 1/\text{precision})$

It is the trade off between type one and type two errors basically.

Given that 1 is the optimal value for the f1 score, it seems that the kNN model performed the best by this measure, while the logit model did the worst.

Gmean is the geometric mean of precision and recall. Here the logit model always gives a zero, and the kNN model once again preformed the best. In general, the gmean scores were lower than the f1 scores for all the models