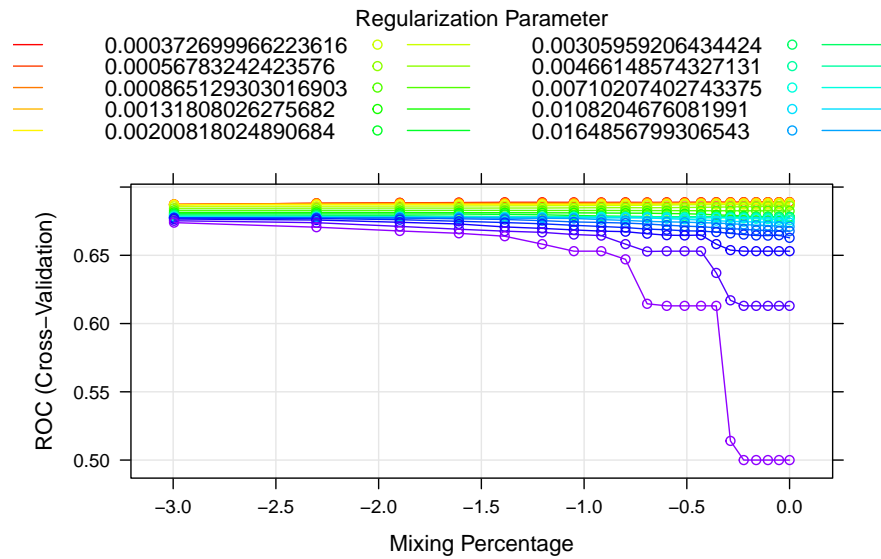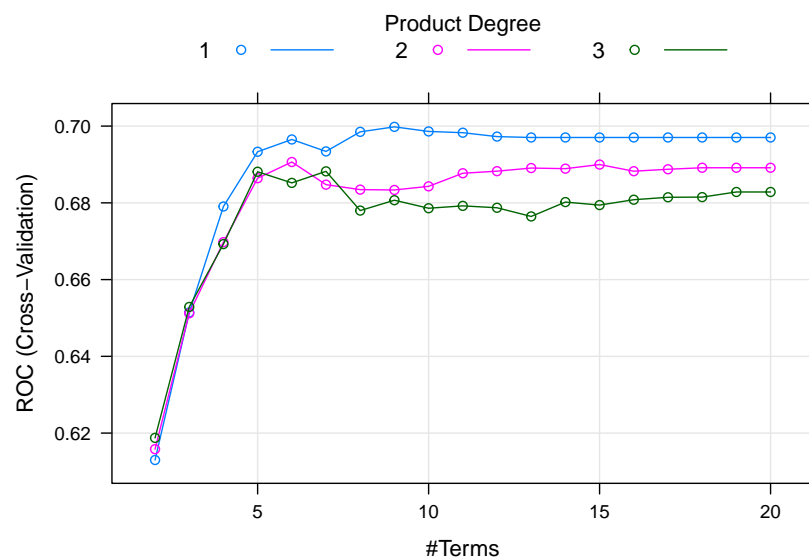# Covid Recovery Analysis - Secondary Analysis

Penalized logistic regression
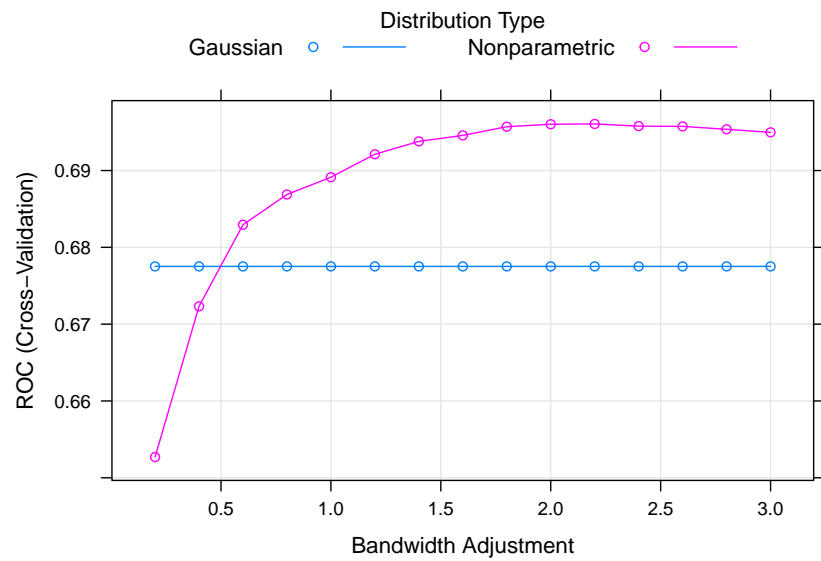

Multivariate adaptive regression splines classifier (MARS)
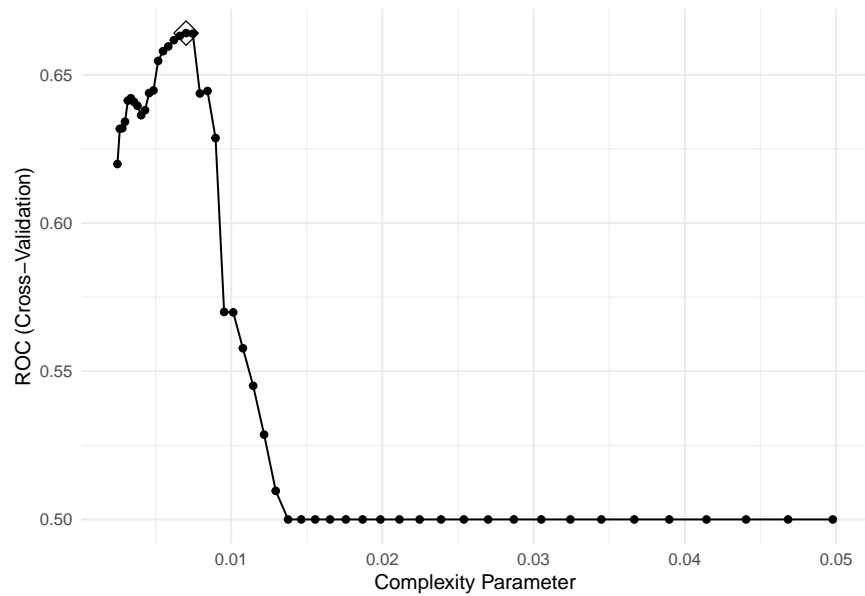
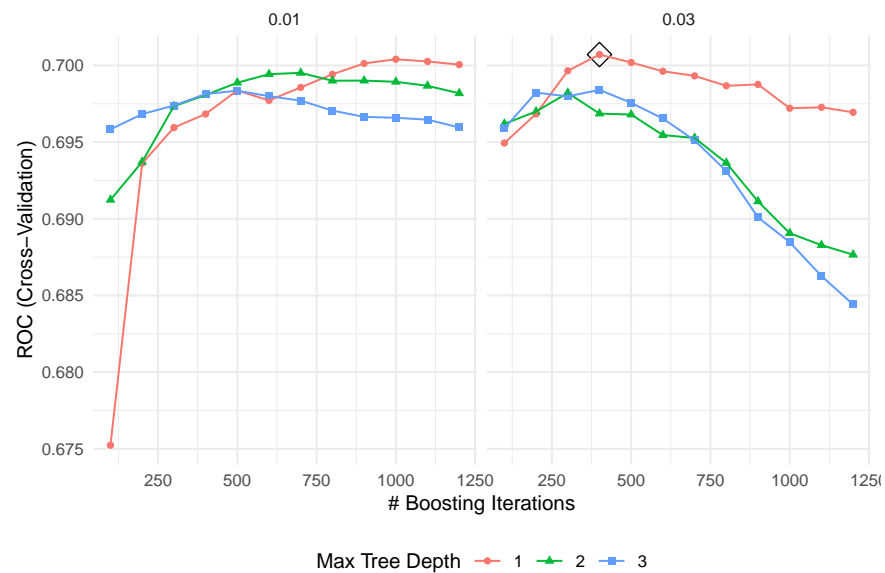# Quadratic discriminant analysis (QDA)

Naive Bayes Classifer
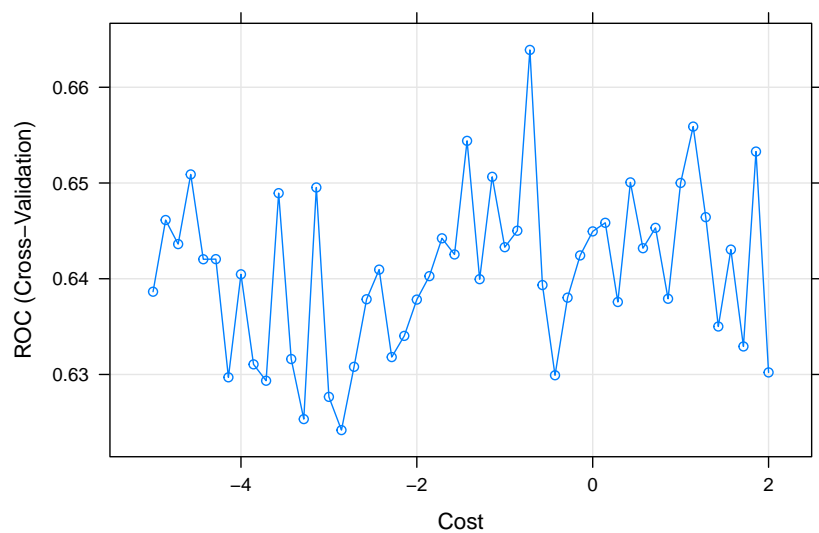

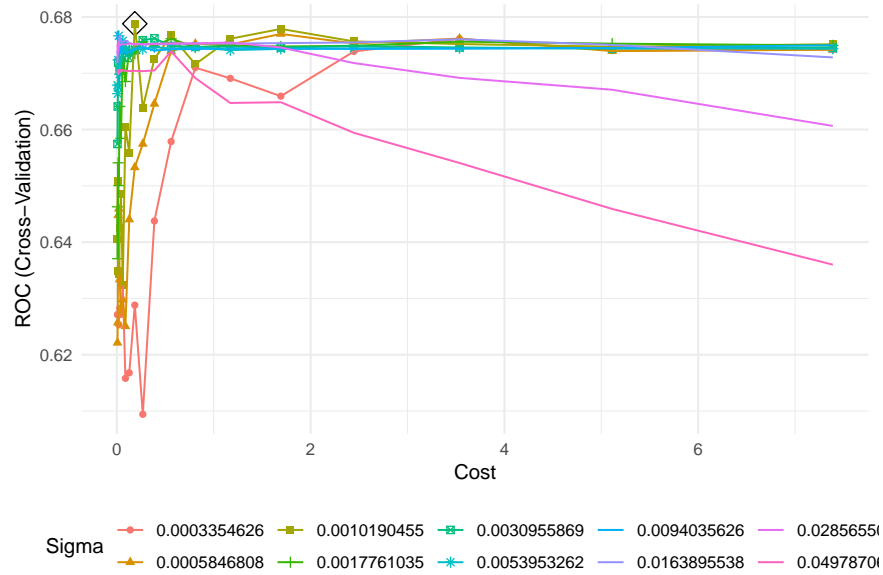
Classification Tree

Adaptive boosting classfier

Support vector classifier with linear kernel

maximum number of iterations reached 0.006653616 -0.006155362maximum number of iterations reached 0.0

Support vector classifier with radial kernel

maximum number of iterations reached 0.005222841 -0.005200133maximum number of iterations reached 0.0

Sigma
0.0003354626 0.0010190455 0.0030955869 0.0094035626 0.028565550
0.0005846808 0.0017761035 0.0053953262 0.0163895538 0.049787000

Models Comparsion based on Area Under Curves
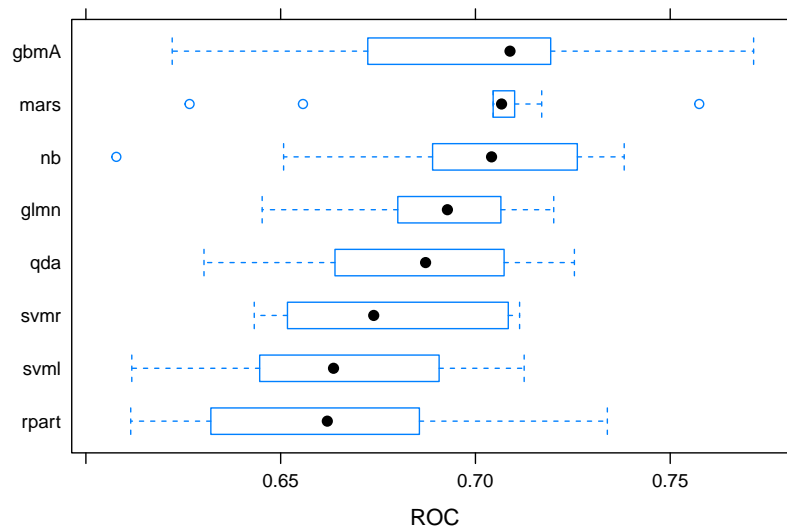
Final model performance on test dataset

	x
Accuracy	0.7218359
Kappa	0.1815036

Variable importance plots of the final model

Relative influence
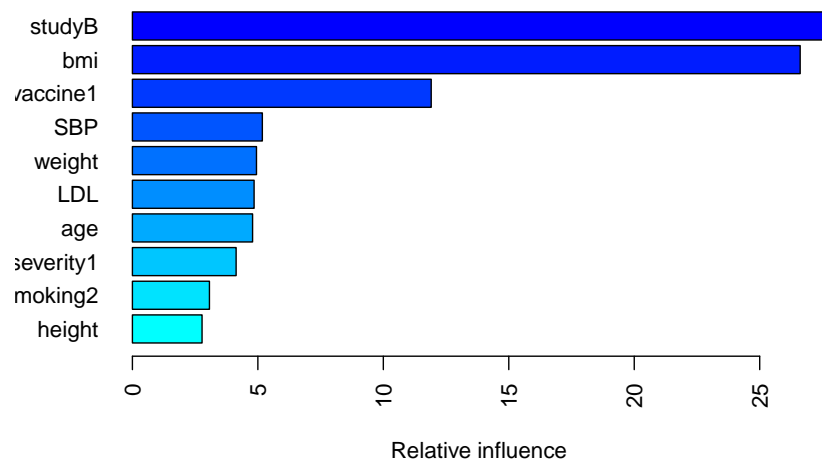
	rel.inf
studyB	27.8958031
bmi	26.6131604
vaccine1	11.9080853
SBP	5.1783551
weight	4.9451667
LDL	4.8495707
age	4.7895698
severity1	4.1331856
smoking2	3.0702806
height	2.7755020
gender1	1.1978980
smoking1	1.0717996
race4	1.0470291
race2	0.2303987
race3	0.1567322
studyC	0.1374633
hypertension1	0.0000000
diabetes1	0.0000000

Final Model intepretation

Partial dependence plot by BMI

Partial dependence plot by SBP and LDL

Probability of long recovery time in Logit
−0.7 −0.6 −0.5 −0.4 −0.3

ICE plot for bmi versus probability of long recovery (>30) in logit