$lr

$lr$model

Call: glm(formula = formula, family = "binomial", data = data.train)

Coefficients:

(Intercept) AVProductsInstalled

-3.976e+00 5.197e-01

CountryIdentifier OrganizationIdentifier

2.439e-03 -3.019e-03

GeoNameIdentifier LocaleEnglishNameIdentifier

9.558e-04 3.945e-04

OsBuild OsSuite

1.206e-04 -1.105e-01

OsPlatformSubRelease SkuEdition

-6.649e-02 6.428e-02

IeVerIdentifier SmartScreen

1.233e-03 8.286e-02

Census\_MDC2FormFactor Census\_ProcessorCoreCount

1.171e-01 1.185e-02

Census\_ProcessorManufacturerIdentifier Census\_PrimaryDiskTotalCapacity

2.850e-02 2.815e-07

Census\_PrimaryDiskTypeName Census\_SystemVolumeTotalCapacity

2.882e-02 -2.377e-07

Census\_TotalPhysicalRAM Census\_ChassisTypeName

2.483e-05 1.733e-02

Census\_InternalPrimaryDiagonalDisplaySizeInInches Census\_InternalPrimaryDisplayResolutionHorizontal

1.753e-03 4.473e-04

Census\_InternalPrimaryDisplayResolutionVertical Census\_PowerPlatformRoleName

-8.791e-04 -4.969e-03

Census\_InternalBatteryType Census\_InternalBatteryNumberOfCharges

2.251e-02 -6.133e-11

Census\_OSBranch Census\_OSBuildNumber

1.563e-02 1.676e-05

Census\_OSBuildRevision Census\_OSEdition

-2.336e-05 4.909e-02

Census\_OSSkuName Census\_OSInstallTypeName

-5.256e-02 2.068e-02

Census\_OSInstallLanguageIdentifier Census\_OSUILocaleIdentifier

-1.038e-02 2.074e-03

Census\_OSWUAutoUpdateOptionsName Census\_GenuineStateName

-6.070e-03 7.986e-02

Census\_ActivationChannel Census\_IsFlightingInternal

3.313e-02 -1.238e-01

Census\_ThresholdOptIn Census\_IsSecureBootEnabled

-3.362e-01 1.525e-01

Census\_IsWIMBootEnabled Census\_IsTouchEnabled

-4.718e+00 4.632e-02

Wdft\_IsGamer Wdft\_RegionIdentifier

1.589e-01 -1.916e-02

EngineVersion\_2 EngineVersion\_3

8.149e-04 -1.142e-01

AppVersion\_1 AppVersion\_2

-1.411e-01 -5.602e-05

AppVersion\_3 AvSigVersion\_1

1.149e-05 -1.817e-02

AvSigVersion\_2 Census\_OSVersion\_2

6.418e-05 NA

Census\_OSVersion\_3

NA

Degrees of Freedom: 17999 Total (i.e. Null); 17949 Residual

Null Deviance: 24950

Residual Deviance: 22770 AIC: 22870

$lr$stats

n.train hi.train mi.train fa.train cr.train sens.train spec.train far.train ppv.train npv.train acc.train acc\_p.train bacc.train

1 18000 4912 3897 2678 6513 0.5576115 0.708628 0.291372 0.6471673 0.6256484 0.6347222 6.746438e-247 0.6331198

wacc.train dprime.train costout.train cost.train n.test hi.test mi.test fa.test cr.test sens.test spec.test far.test ppv.test npv.test

1 0.6331198 -0.4044399 0.3652778 0.3652778 7000 1911 1522 1021 2546 0.556656 0.7137651 0.2862349 0.6517735 0.6258604

acc.test acc\_p.test bacc.test wacc.test dprime.test costout.test cost.test

1 0.6367143 4.369138e-102 0.6352105 0.6352105 -0.4218543 0.3632857 0.3632857

$cart

$cart$model

n= 18000

node), split, n, loss, yval, (yprob)

\* denotes terminal node

1) root 18000 8809 0 (0.5106111 0.4893889)

2) SmartScreen< 13.5 15227 6630 0 (0.5645892 0.4354108)

4) AVProductsInstalled< 5.5 5610 1971 0 (0.6486631 0.3513369) \*

5) AVProductsInstalled>=5.5 9617 4659 0 (0.5155454 0.4844546)

10) Census\_InternalPrimaryDiagonalDisplaySizeInInches< 11.5508 740 193 0 (0.7391892 0.2608108) \*

11) Census\_InternalPrimaryDiagonalDisplaySizeInInches>=11.5508 8877 4411 1 (0.4969021 0.5030979)

22) EngineVersion\_2< 15050 1319 462 0 (0.6497346 0.3502654) \*

23) EngineVersion\_2>=15050 7558 3554 1 (0.4702302 0.5297698)

46) Census\_OSBuildRevision>=439 3101 1491 0 (0.5191874 0.4808126) \*

47) Census\_OSBuildRevision< 439 4457 1944 1 (0.4361678 0.5638322) \*

3) SmartScreen>=13.5 2773 594 1 (0.2142084 0.7857916) \*

$cart$stats

n.train hi.train mi.train fa.train cr.train sens.train spec.train far.train ppv.train npv.train acc.train acc\_p.train bacc.train

1 18000 4692 4117 2538 6653 0.5326371 0.7238603 0.2761397 0.6489627 0.6177344 0.6302778 1.69917e-229 0.6282487

wacc.train dprime.train costout.train cost.train n.test hi.test mi.test fa.test cr.test sens.test spec.test far.test ppv.test npv.test

1 0.6282487 -0.5124157 0.3697222 0.3697222 7000 1772 1661 984 2583 0.5161666 0.7241379 0.2758621 0.6429608 0.6086239

acc.test acc\_p.test bacc.test wacc.test dprime.test costout.test cost.test

1 0.6221429 2.836224e-80 0.6201523 0.6201523 -0.5545556 0.3778571 0.3778571

$rf

$rf$model

Call:

randomForest(formula = formula, data = data.train)

Type of random forest: classification

Number of trees: 500

No. of variables tried at each split: 7

OOB estimate of error rate: 36.01%

Confusion matrix:

0 1 class.error

0 6421 2770 0.3013818

1 3712 5097 0.4213872

$rf$stats

n.train hi.train mi.train fa.train cr.train sens.train spec.train far.train ppv.train npv.train acc.train acc\_p.train bacc.train

1 18000 8809 0 0 9191 1 1 0 1 1 1 0 1

wacc.train dprime.train costout.train cost.train n.test hi.test mi.test fa.test cr.test sens.test spec.test far.test ppv.test npv.test

1 1 -0.009975982 0 0 0 NA NA NA NA NA NA NA NA NA

acc.test acc\_p.test bacc.test wacc.test dprime.test costout.test cost.test

1 NA NA NA NA NA NA NA

$svm

$svm$model

Call:

svm(formula = formula, data = data.train, type = "C")

Parameters:

SVM-Type: C-classification

SVM-Kernel: radial

cost: 1

gamma: 0.01923077

Number of Support Vectors: 14604

$svm$stats

n.train hi.train mi.train fa.train cr.train sens.train spec.train far.train ppv.train npv.train acc.train acc\_p.train bacc.train

1 18000 5478 3331 2042 7149 0.621864 0.7778261 0.2221739 0.7284574 0.6821565 0.7015 0 0.6998451

wacc.train dprime.train costout.train cost.train n.test hi.test mi.test fa.test cr.test sens.test spec.test far.test ppv.test npv.test

1 0.6998451 -0.4544595 0.2985 0.2985 7000 1878 1555 997 2570 0.5470434 0.7204934 0.2795066 0.6532174 0.6230303

acc.test acc\_p.test bacc.test wacc.test dprime.test costout.test cost.test

1 0.6354286 4.746047e-100 0.6337684 0.6337684 -0.4660384 0.3645714 0.3645714