	LR	LR+Lasso	NN
Origin dataset	$AUC [1] 0.9249787 $threshold [1] 0.41 $total_accuracy [1] 0.9134394 $confusion_matrix actual_response pred_class 0 1 0 7088 473 1 240 436 $positive_precision [1] 0.6449704 $positive_recall [1] 0.479648 $negative_precision [1] 0.9374421 $negative_recall [1] 0.9672489	$AUC [1] 0.925106 $threshold [1] 0.03 $total_accuracy [1] 0.9111327 $confusion_matrix actual_response pred_class 0 1 0 7161 565 1 167 344 $positive_precision [1] 0.6731898 $positive_recall [1] 0.3784378 $negative_precision [1] 0.9268703 $negative_recall [1] 0.9772107	Test AUC: 0.9379 Test Accuracy: threshold 0.510000 accuracy 0.916474 accuracy_check 0.916474 positive_precision 0.519252 positive_recall 0.652835 negative_precision 0.965748 negative_recall 0.941842
	Call: glm(formula = y ~ ., family = "binomial", data = full_train_bccp) Deviance Residuals: Min 1Q Median 3Q Max -5.9036 -0.3290 -0.1967 -0.1417 3.3040 Coefficients: (1 not defined because of singularities) Estimate Std. Error z value Pr(>|z|) (Intercept) -3.338880 0.148093 -22.546 < 2e-16 *** jobentrepreneur -0.141085 0.133287 -1.059 0.289823 jobhousemaid 0.135082 0.157316 0.859 0.390525	$opt_lambda_lasso [1] 0.0004023168 $opt_lasso_coefficients 38 x 1 sparse Matrix of class "dgCMatrix" s0 (Intercept) -3.240085766 jobentrepreneur -0.101759551 jobhousemaid 0.068790534 jobmanagement -0.024443403 jobretired 0.454686692 jobself.employed -0.034214446	

	jobmanagement -0.055452 0.092834 -0.597 0.550292 jobretired 0.463713 0.113165 4.098 4.17e-05 *** jobself.employed -0.075421 0.130231 -0.579 0.562498 jobservices 0.002575 0.088177 0.029 0.976702 jobstudent 0.452538 0.119725 3.780 0.000157 *** jobtechnician 0.149176 0.072499 2.058 0.039626 * jobunemployed 0.143216 0.137031 1.045 0.295959 jobunknown 0.200656 0.257623 0.779 0.436052 maritalmarried 0.008157 0.075180 0.109 0.913596 maritalsingle 0.102266 0.085710 1.193 0.232805 maritalunknown -0.111660 0.461173 -0.242 0.808686 educationbasic.6y 0.025368 0.131846 0.192 0.847424 educationbasic.9y -0.081533 0.103902 -0.785 0.432622 educationhigh.school 0.072666 0.095145 0.764 0.445020 educationilliterate 0.959618 1.019522 0.941 0.346580 educationprofessional.course 0.168434 0.107780 1.563 0.118110 educationuniversity.degree 0.345672 0.091723 3.769 0.000164 *** educationunknown 0.166480 0.130350 1.277 0.201540 defaultunknown -0.418613 0.074174 -5.644 1.66e-08 *** defaultyes -7.221093 139.129448 -0.052 0.958607 housingunknown -0.110378 0.153478 -0.719 0.472030 housingyes -0.007147 0.045451 -0.157 0.875057 loanunknown NA NA NA NA loanyes -0.034646 0.063139 -0.549 0.583197 contacttelephone -0.893036 0.067400 -13.250 < 2e-16 *** poutcomenonexistent 0.539427 0.104257 5.174 2.29e-07 *** poutcomesuccess 0.839071 0.235215 3.567 0.000361 *** age 0.017887 0.027918 0.641 0.521720 duration 1.175000 0.020813 56.454 < 2e-16 *** campaign -0.091665 0.034473 -2.659 0.007837 ** pdays -0.205432 0.045110 -4.554 5.26e-06 *** previous -0.007138 0.032525 -0.219 0.826291 emp.var.rate -1.422511 0.036811 -38.643 < 2e-16 ***	jobservices . jobstudent 0.433259487 jobtechnician 0.139490293 jobunemployed 0.106934733 jobunknown 0.125840293 maritalmarried . maritalsingle 0.085591888 maritalunknown -0.004234320 educationbasic.6y -0.012405746 educationbasic.9y -0.132058899 educationhigh.school . educationilliterate 0.599202544 educationprofessional.course 0.090555664 educationuniversity.degree 0.263813436 educationunknown 0.085553613 defaultunknown -0.405447497 defaultyes . housingunknown -0.052778568 housingyes . loanunknown -0.007608956 loanyes -0.014321283 contacttelephone -0.856569815 poutcomenonexistent 0.510027798 poutcomesuccess 0.834466317 age 0.007057162 duration 1.162522308 campaign -0.077666398 pdays -0.200885129 previous . emp.var.rate -1.395424537 cons.price.idx 0.738130891 cons.conf.idx 0.239016972	

	cons.price.idx 0.767954 0.033985 22.597 < 2e-16 *** cons.conf.idx 0.244791 0.019960 12.264 < 2e-16 *** --- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 (Dispersion parameter for binomial family taken to be 1) Null deviance: 23277 on 32950 degrees of freedom Residual deviance: 14170 on 32914 degrees of freedom AIC: 14244 Number of Fisher Scoring iterations: 10		
Balanced dataset	$AUC [1] 0.9293573 $threshold [1] 0.36 $total_accuracy [1] 0.8592077 $confusion_matrix actual_response pred_class 0 1 0 752 75 1 188 853 $positive_precision [1] 0.8194044 $positive_recall [1] 0.919181 $negative_precision [1] 0.9093108 $negative_recall	$AUC [1] 0.9289177 $threshold [1] 0.01 $total_accuracy [1] 0.8543897 $confusion_matrix actual_response pred_class 0 1 0 803 135 1 137 793 $positive_precision [1] 0.8526882 $positive_recall [1] 0.8545259 $negative_precision [1] 0.8560768 $negative_recall	Test AUC: 0.9310 Test Accuracy: threshold 0.790000 accuracy 0.860278 accuracy_check 0.860278 positive_precision 0.934267 positive_recall 0.812559 negative_precision 0.787234 negative_recall 0.923845

	[1] 0.8	[1] 0.8542553	
	Call: glm(formula = y ~ ., family = "binomial", data = full_train_bccp) Deviance Residuals: Min 1Q Median 3Q Max -6.8752 -0.4458 -0.1277 0.5131 2.7552 Coefficients: (1 not defined because of singularities) Estimate Std. Error z value Pr(>|z|) (Intercept) -0.17538 0.23607 -0.743 0.457536 jobentrepreneur -0.39157 0.19858 -1.972 0.048632 * jobhousemaid 0.18316 0.24455 0.749 0.453867 jobmanagement -0.10380 0.14555 -0.713 0.475742 jobretired 0.64833 0.18548 3.495 0.000473 *** jobself.employed -0.28134 0.20239 -1.390 0.164503 jobservices -0.06247 0.13485 -0.463 0.643180 jobstudent 0.75815 0.20250 3.744 0.000181 *** jobtechnician 0.06757 0.11449 0.590 0.555046 jobunemployed 0.41322 0.21308 1.939 0.052474 . jobunknown 0.47174 0.38912 1.212 0.225383 maritalmarried -0.02954 0.11780 -0.251 0.801960 maritalsingle 0.06276 0.13306 0.472 0.637184 maritalunknown -0.44135 0.68199 -0.647 0.517530 educationbasic.6y -0.26317 0.21054 -1.250 0.211315 educationbasic.9y -0.21769 0.16384 -1.329 0.183947 educationhigh.school -0.10896 0.15484 -0.704 0.481639 educationilliterate 0.27144 1.23402 0.220 0.825900 educationprofessional.course 0.05143 0.17474 0.294 0.768522 educationuniversity.degree 0.43965 0.14991 2.933 0.003359 ** educationunknown 0.05622 0.21172 0.266 0.790592 defaultunknown -0.51112 0.11380 -4.491 7.07e-06 *** housingunknown -0.01354 0.24238 -0.056 0.955439 housingyes 0.04075 0.07135 0.571 0.567887 loanunknown NA NA NA NA loanyes -0.14344 0.09881 -1.452 0.146572 contacttelephone -0.72783 0.10035 -7.253 4.08e-13 ***	$opt_lambda_lasso [1] 0.004632514 $opt_lasso_coefficients 37 x 1 sparse Matrix of class "dgCMatrix" s0 (Intercept) -0.067331652 jobentrepreneur -0.197161296 jobhousemaid . jobmanagement . jobretired 0.571581476 jobself.employed -0.011048088 jobservices -0.010062958 jobstudent 0.533445121 jobtechnician . jobunemployed 0.164930969 jobunknown 0.005647422 maritalmarried . maritalsingle 0.020126688 maritalunknown . educationbasic.6y -0.121088274 educationbasic.9y -0.156574395 educationhigh.school -0.050947411 educationilliterate . educationprofessional.course . educationuniversity.degree 0.327212118 educationunknown . defaultunknown -0.401166734 housingunknown . housingyes . loanunknown . loanyes -0.010780495 contacttelephone -0.512798760 poutcomenonexistent 0.243256196 poutcomesuccess 0.901413653 age . duration 2.137849593 campaign -0.086350607	

	poutcomenonexistent 0.46234 0.17932 2.578 0.009928 ** poutcomesuccess 0.97433 0.45326 2.150 0.031585 * age 0.04560 0.04974 0.917 0.359284 duration 2.34788 0.06332 37.081 < 2e-16 *** campaign -0.14020 0.04343 -3.228 0.001246 ** pdays -0.33381 0.14300 -2.334 0.019577 * previous -0.08312 0.08640 -0.962 0.336024 emp.var.rate -1.76088 0.06559 -26.848 < 2e-16 *** cons.price.idx 0.74841 0.06169 12.132 < 2e-16 *** cons.conf.idx 0.28328 0.03686 7.686 1.52e-14 *** --- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 (Dispersion parameter for binomial family taken to be 1) Null deviance: 10360.8 on 7473 degrees of freedom Residual deviance: 5276.4 on 7438 degrees of freedom AIC: 5348.4 Number of Fisher Scoring iterations: 6	pdays -0.245739352 previous . emp.var.rate -1.506759145 cons.price.idx 0.513634200 cons.conf.idx 0.221030902	