

Classification Report				
	precision	recall	f1-score	support
0	0.54	0.59	0.56	122
1	0.43	0.38	0.40	98
accuracy			0.50	220
macro avg	0.48	0.48	0.48	220
weighted avg	0.49	0.50	0.49	220

Accuracy  
Accuracy: 0.49545454545455

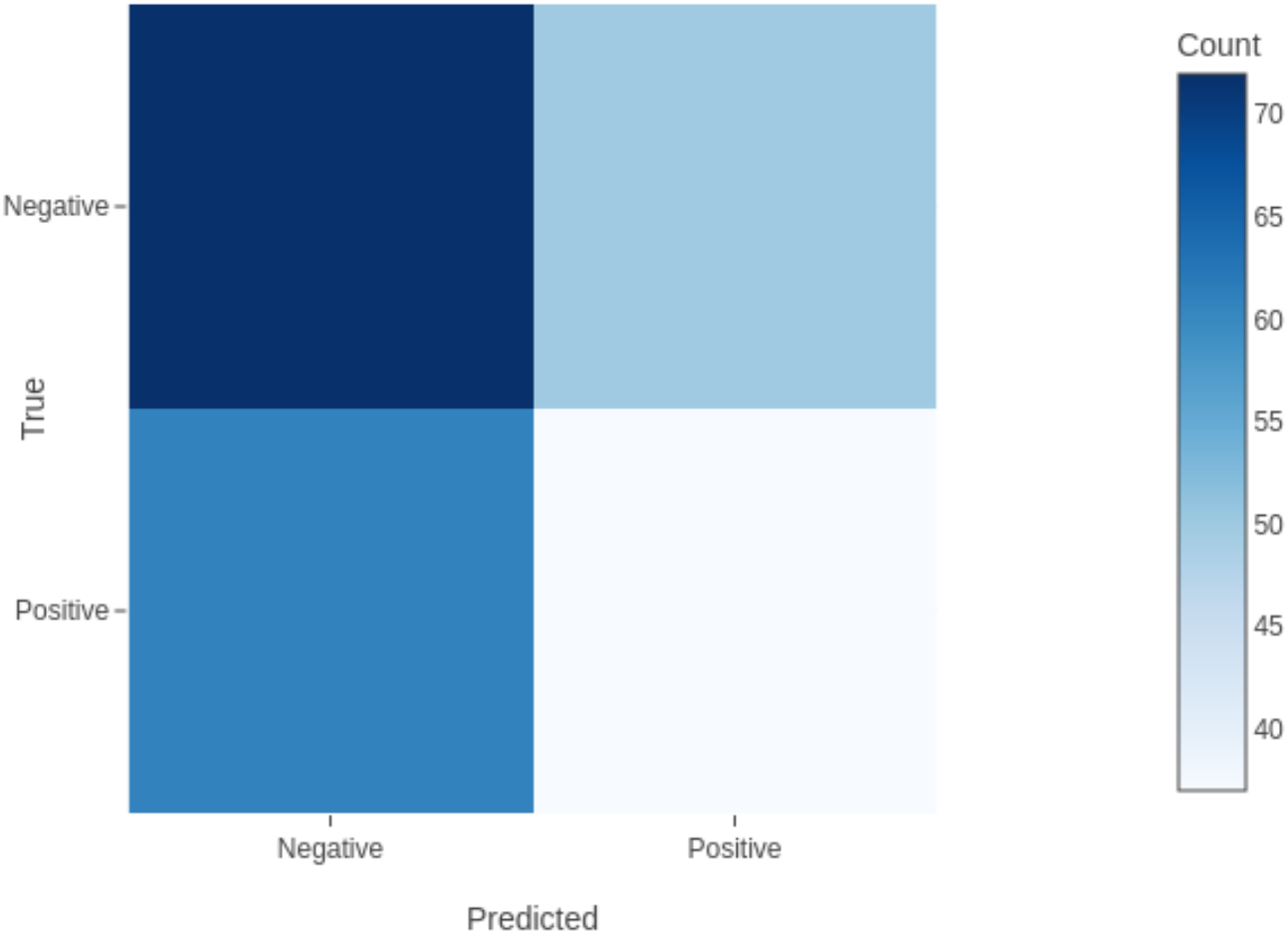
Optimal Win Ranges Summary			
	feature	optimal_win_range_start	optimal_win_range_end
0	144_SMA_percent_away	-3.027558	-2.832364
1	144_SMA_percent_away	-0.617928	1.354200
2	MFI	-2.305561	-0.285284
3	CP+_R5_percent_away	-2.868974	-2.806952
4	CP+_R5_percent_away	-1.638874	0.935032
5	CP+_R6_percent_away	-1.956175	0.855985
6	VROC	-0.747960	-0.203033
7	VROC	0.670451	1.616058
8	VROC	2.201053	2.673856
9	VROC	3.403096	4.989793
10	VROC	6.432244	7.057307
11	62_ZLEMA_percent_away	-1.019363	0.293856
12	62_ZLEMA_percent_away	2.278608	2.853141
13	VWAP_L2_percent_away	-0.842338	0.133404
14	VWAP_L2_percent_away	0.935682	2.070434
15	VWAP_L2_percent_away	3.566573	4.065286
16	MACD_DIFF	-1.631827	-0.504169
17	MACD_DIFF	1.044607	2.579346
18	APZ_LOW_percent_away	-5.537002	-3.199167
19	APZ_LOW_percent_away	-2.965383	-2.200273
20	APZ_LOW_percent_away	-1.201380	0.201322
21	APZ_LOW_percent_away	0.945179	1.285227
22	APZ_LOW_percent_away	4.345667	5.365813
23	APZ_UPPER_percent_away	-3.746742	-2.786854
24	APZ_UPPER_percent_away	-1.337966	-0.631633
25	APZ_UPPER_percent_away	0.074699	0.998365

# Loss Mitigation Analysis

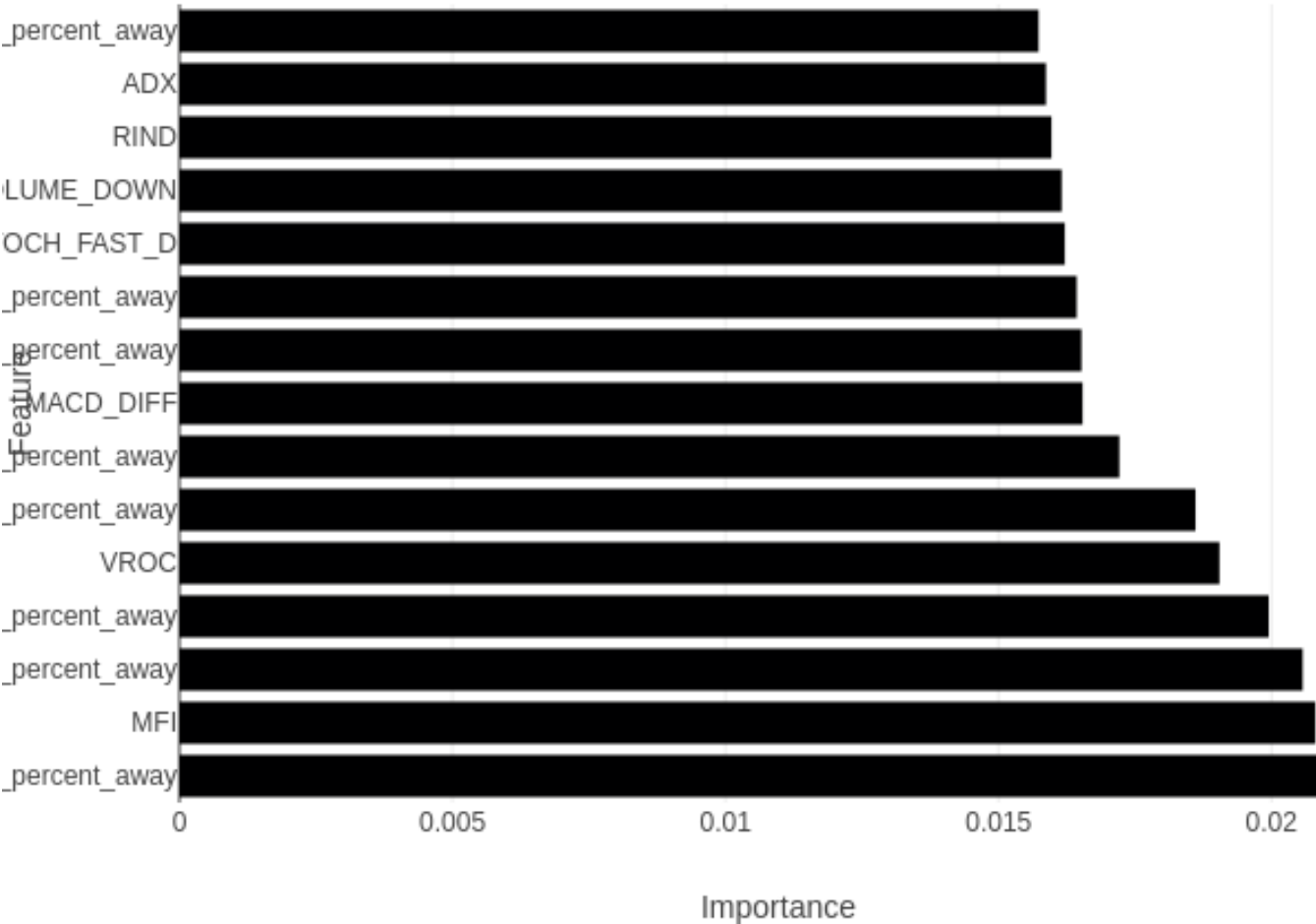
	count	mean	std	min	25%	50%	75%	max
ADX	519.0	0.050207	1.102537	-1.300359e+00	-5.836247e-01	-2.960232e-01	2.795924e-01	8.404177e-01
AROON_DOWN	519.0	-0.025067	0.988170	-9.750002e-01	-9.750002e-01	-1.968771e-01	8.404177e-01	8.404177e-01
AROON_UP	519.0	0.048243	0.961221	-2.529763e+00	2.450408e-01	4.971994e-01	4.971994e-01	4.971994e-01
ATR	519.0	-0.021088	0.989429	-2.967394e+00	-7.142612e-01	-9.977054e-02	6.025045e-01	6.025045e-01
AWESOME	519.0	0.023714	1.011175	-2.522899e+00	-5.652758e-01	-8.258065e-05	6.336181e-01	6.336181e-01
CCI	519.0	-0.006605	1.009473	-1.955254e+00	-1.002677e+00	-1.430411e-01	7.308380e-01	7.308380e-01
CHAIKIN	519.0	0.003999	1.045252	-7.469117e+00	-3.256318e-01	1.317977e-01	4.077193e-01	4.077193e-01
CMO	519.0	0.039368	0.985227	-2.650823e+00	-6.908394e-01	-1.648854e-02	6.570537e-01	6.570537e-01
DISPARITY_INDEX	519.0	0.012683	1.029725	-2.424537e+00	-6.398215e-01	2.525361e-01	2.525361e-01	2.525361e-01
DM_ADX_PLOT	519.0	0.050207	1.102537	-1.300359e+00	-5.836247e-01	-2.960232e-01	2.795924e-01	8.404177e-01
DM_DI_MINUS	519.0	-0.042488	1.021084	-3.181025e+00	-6.022680e-01	4.501028e-02	6.172031e-01	6.172031e-01
DM_DI_PLUS	519.0	0.025463	1.040987	-3.428033e+00	-6.137158e-01	-1.824323e-02	6.764731e-01	6.764731e-01
DYNAMIC_MOMENTUM	519.0	0.006191	1.013629	-1.342304e+00	-8.820801e-01	1.090253e-01	1.090253e-01	1.090253e-01
FISHER_TRANSFORM	519.0	0.022392	1.014788	-2.428263e+00	-1.006639e+00	1.677460e-01	1.677460e-01	1.677460e-01
LIN_REG_SLOPE	519.0	0.028825	1.006049	-2.388261e+00	-1.123786e+00	-2.597279e-01	9.830711e-01	9.830711e-01
MACD_AVG	519.0	0.011953	1.011684	-2.463441e+00	-6.707324e-01	9.380799e-03	5.691601e-01	5.691601e-01
MACD_DEFAULT	519.0	0.012869	1.014948	-2.418966e+00	-6.408845e-01	-3.092020e-02	5.691601e-01	5.691601e-01
MACD_DIFF	519.0	-0.008747	1.000811	-2.095056e+00	-7.028151e-01	-1.169398e-01	7.272241e-01	7.272241e-01
MFI	519.0	0.092006	1.002361	-2.410603e+00	-6.577771e-01	1.125880e-01	8.222717e-01	8.222717e-01
MOMENTUM	519.0	0.043404	0.966016	-3.435090e+00	-3.271072e-01	1.168903e-01	5.608831e-01	5.608831e-01
PFE	519.0	0.022506	1.005431	-2.435360e+00	-5.285676e-01	2.016932e-01	5.262536e-01	5.262536e-01
RIND	519.0	-0.018288	0.977202	-1.401491e+00	-7.597845e-01	-3.185242e-01	6.707156e-01	6.707156e-01
RSI_AVERAGE	519.0	0.012255	1.028327	-1.811083e+00	-6.816188e-01	-2.028101e-01	5.370111e-01	5.370111e-01
RSI_DEFAULT	519.0	0.022087	1.032960	-1.795899e+00	-6.204616e-01	-1.119393e-01	8.300711e-01	8.300711e-01
RSS	519.0	0.016666	0.989047	-4.792159e+00	-5.625098e-01	8.903767e-02	6.864856e-01	6.864856e-01
RVI	519.0	0.011001	1.021750	-2.496300e+00	-6.733139e-01	4.085737e-02	5.609479e-01	5.609479e-01
R_SQUARED	519.0	0.000201	0.992668	-2.161233e+00	-8.207832e-01	2.515765e-01	1.100511e-01	1.100511e-01
STOCH_FAST_D	519.0	-0.027256	0.988641	-1.457680e+00	-6.422925e-01	-2.398738e-01	5.760111e-01	5.760111e-01
STOCH_FAST_K	519.0	-0.000168	1.019995	-2.111148e+00	-7.287767e-01	3.957629e-02	8.360111e-01	8.360111e-01
TRIX_DEFAULT	519.0	0.044055	1.081288	-2.508622e-01	-2.508622e-01	-2.508622e-01	-2.508622e-01	-2.508622e-01
TRIX_SIGNAL	519.0	0.042840	1.079781	-4.414297e+00	-2.387479e-01	-2.387479e-01	-2.387479e-01	-2.387479e-01
VOLUME	519.0	-0.051153	0.958031	-5.772758e-01	-5.365999e-01	-4.633832e-01	-1.088246e-01	-1.088246e-01
VOLUME_DOWN	519.0	-0.051153	0.958031	-5.772758e-01	-5.365999e-01	-4.633832e-01	-1.088246e-01	-1.088246e-01
VOLUME_UP	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
VORTEX_MINUS	519.0	-0.001079	1.009812	-3.170790e+00	-7.953148e-01	-2.014460e-01	3.920111e-01	3.920111e-01
VORTEX_PLUS	519.0	0.017819	0.989620	-3.005169e+00	-7.064172e-01	2.130835e-01	6.728111e-01	6.728111e-01
VROC	519.0	-0.000683	1.016312	-7.479597e-01	-6.283425e-01	-3.710378e-01	2.048720e-01	2.048720e-01
WILLIAMS_%R	519.0	-0.000168	1.019997	-2.111152e+00	-7.287735e-01	3.958357e-02	8.367111e-01	8.367111e-01
1000_SMA_percent_away	519.0	-0.031188	1.026108	-2.658925e+00	-7.188174e-01	-1.674576e-02	6.025045e-01	6.025045e-01
144_SMA_percent_away	519.0	0.000167	1.055427	-3.640062e+00	-7.762678e-01	-4.825179e-02	6.025045e-01	6.025045e-01
14_P_MA_ENVELOPES_LOWER_percent_away	519.0	0.015819	1.078132	-1.030632e+01	-7.605997e-01	-8.20584e-01	-8.20584e-01	-8.20584e-01
14_P_MA_ENVELOPES_MID_percent_away	519.0	0.015823	1.078107	-1.030506e+01	-7.614786e-01	-4.611177e-01	-4.611177e-01	-4.611177e-01
14_P_MA_ENVELOPES_UPPER_percent_away	519.0	0.015894	1.078173	-1.030722e+01	-7.620584e-01	-7.40584e-01	-7.40584e-01	-7.40584e-01
236_EMA_percent_away	519.0	-0.014582	1.054022	-3.237817e+00	-6.943256e-01	-2.851122e-02	6.025045e-01	6.025045e-01
382_EMA_percent_away	519.0	-0.020361	1.046772	-3.292389e+00	-7.163878e-01	-2.356824e-02	6.025045e-01	6.025045e-01
618_EMA_percent_away	519.0	-0.023928	1.039040	-2.949323e+00	-6.883537e-01	-5.873677e-03	6.025045e-01	6.025045e-01
62_ZLEMA_percent_away	519.0	0.011045	1.039921	-4.339719e+00	-7.817056e-01	1.490741e-01	8.025045e-01	8.025045e-01
8_ZLEMA_percent_away	519.0	0.017576	1.022453	-5.775749e+00	-6.550347e-01	1.877232e-01	8.025045e-01	8.025045e-01
ACCUM_DIST_percent_away	519.0	0.028407	0.976634	-1.648087e+00	-1.054554e+00	2.032439e-01	2.032439e-01	2.032439e-01
APZ_LOW_percent_away	519.0	0.019620	1.165531	-1.520714e+01	-5.247602e-01	-8.365246e-02	5.025045e-01	5.025045e-01
APZ_UPPER_percent_away	519.0	-0.000004	1.145690	-1.247629e+01	-5.065265e-01	9.432796e-03	5.025045e-01	5.025045e-01
BOLLI_500_P_LOWER_percent_away	519.0	-0.012195	1.036672	-2.317786e+00	-7.882211e-01	-1.502274e-01	-1.502274e-01	-1.502274e-01
BOLLI_500_P_MID_percent_away	519.0	-0.017831	1.031365	-3.538163e+00	-7.134009e-01	2.693896e-01	2.693896e-01	2.693896e-01
BOLLI_500_P_UPPER_percent_away	519.0	-0.021912	1.023375	-4.443134e+00	-5.904578e-01	1.630520e-01	1.630520e-01	1.630520e-01
CP+_C_percent_away	519.0	-0.000050	1.032295	-2.934605e+00	-5.236507e-01	1.806413e-02	5.302545e-01	5.302545e-01
CP+_R1_percent_away	519.0	0.004026	1.035411	-2.884883e+00	-5.486237e-01	3.884438e-02	5.102545e-01	5.102545e-01
CP+_R2_percent_away	519.0	0.008144	1.037935	-2.834954e+00	-5.468014e-01	5.216149e-02	5.802545e-01	5.802545e-01
CP+_R3_percent_away	519.0	0.012217	1.039755	-2.823692e+00	-5.884343e-01	8.193059e-02	6.002545e-01	6.002545e-01
CP+_R4_percent_away	519.0	0.023426	1.040688	-2.878152e+00	-6.850631e-01	9.988870e-02	7.102545e-01	7.102545e-01
CP+_R5_percent_away	519.0	0.036294	1.032086	-2.832033e+00	-7.336998e-01	6.026349e-02	8.502545e-01	8.502545e-01
CP+_R6_percent_away	519.0	0.044624	1.017609	-2.550141e+00	-6.526626e-01	-1.574535e-02	9.102545e-01	9.102545e-01
CP+_S1_percent_away	519.0	-0.004010	1.028737	-2.964606e+00	-5.258892e-01	2.137780e-02	5.002545e-01	5.002545e-01
CP+_S2_percent_away	519.0	-0.007792	1.024905	-2.976215e+00	-5.539166e-01	1.860125e-02	5.302545e-01	5.302545e-01

Loss Mitigation Analysis							
CP+ _S3_percent_away	519.0	-0.011345	1.020959	-2.971678e+00	-5.984247e-01	7.659270e-03	5.5
CP+ _S4_percent_away	519.0	-0.020422	1.009678	-2.886730e+00	-6.730799e-01	-5.012887e-02	6.2
CP+ _S5_percent_away	519.0	-0.030451	0.996130	-2.646028e+00	-8.030522e-01	-1.634381e-01	7.4
CP+ _S6_percent_away	519.0	-0.037886	0.986472	-2.325417e+00	-8.879416e-01	-2.112412e-01	7.4
LIN_REG_percent_away	519.0	-0.026485	1.079874	-1.031727e+01	-7.273308e-01	3.633127e-02	6.5
LIN_REG_INTERCEPT_percent_away	519.0	0.026288	1.021505	-4.575680e+00	-9.378040e-01	-2.020967	
OBV_percent_away	519.0	0.029418	0.976085	-1.660427e+00	-1.066399e+00	2.338904e-01	5.41
VROC_percent_away	519.0	0.035706	0.813441	5.171408e-16	5.171408e-16	5.171408e-16	5.17
VWAP_percent_away	519.0	-0.021232	1.056430	-3.547590e+00	-5.113772e-01	9.971414e-02	5.2
VWAP_CLOUD_HIGH_percent_away	519.0	-0.044370	1.055709	-4.591398e+00	-3.465760e-01	5.073040	
VWAP_CLOUD_LOW_percent_away	519.0	0.021340	1.057713	-8.945391e-01	-5.267866e-01	-5.004314	
VWAP_L1_percent_away	519.0	-0.010464	1.063732	-2.700486e+00	-5.943085e-01	-1.972127e-01	4
VWAP_L2_percent_away	519.0	0.000889	1.061927	-1.695210e+00	-7.577268e-01	-2.729157e-01	3
VWAP_U1_percent_away	519.0	-0.027679	1.045906	-4.256298e+00	-4.434716e-01	2.865124e-01	5
VWAP_U2_percent_away	519.0	-0.030442	1.038516	-4.479888e+00	-3.636414e-01	3.254565e-01	6
ZIGZAG_HIGH_percent_away	519.0	0.001163	1.106294	-1.202656e+01	-6.029491e-01	-7.192187e-02	
ZIGZAG_LOW_percent_away	519.0	0.048518	1.097549	-1.707336e+00	-4.646908e-01	-2.835452e-01	
1000_SMA_binary	519.0	-0.016334	1.000338	-1.001370e+00	-1.001370e+00	-1.001370e+00	9.99
144_SMA_binary	519.0	0.014915	1.004080	-7.932032e-01	-7.932032e-01	-7.932032e-01	1.2613
14_P_MA_ENVELOPES_LOWER_binary	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00	0.0000
14_P_MA_ENVELOPES_MID_binary	519.0	0.038619	1.260341	-6.332923e-02	-6.332923e-02	-6.332923e-02	
14_P_MA_ENVELOPES_UPPER_binary	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00	0.0000
236_EMA_binary	519.0	-0.024830	0.996789	-8.704268e-01	-8.704268e-01	-8.704268e-01	1.1496
382_EMA_binary	519.0	-0.040701	0.997700	-9.528261e-01	-9.528261e-01	-9.528261e-01	1.0503
618_EMA_binary	519.0	-0.027244	0.999568	-9.813304e-01	-9.813304e-01	-9.813304e-01	1.0199
62_ZLEMA_binary	519.0	0.026491	1.020494	-4.650529e-01	-4.650529e-01	-4.650529e-01	-4.650
8_ZLEMA_binary	519.0	0.010281	1.005538	-6.586606e-01	-6.586606e-01	-6.586606e-01	1.5214
ACCUM_DIST_binary	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00	0.0
APZ_LOW_binary	519.0	-0.050638	1.452911	-2.644837e+01	4.554755e-02	4.554755e-02	4.554
APZ_UPPER_binary	519.0	0.033597	1.453851	-3.021989e-02	-3.021989e-02	-3.021989e-02	-3.02
BOLLI_500_P_LOWER_binary	519.0	-0.044185	1.019123	-1.522182e+00	-1.522182e+00	6.579966e-01	
BOLLI_500_P_MID_binary	519.0	-0.028864	0.999650	-9.867188e-01	-9.867188e-01	-9.867188e-01	1.
BOLLI_500_P_UPPER_binary	519.0	0.022264	1.014178	-5.700797e-01	-5.700797e-01	-5.700797e-01	
CP+ _C_binary	519.0	0.014954	1.001781	-9.087938e-01	-9.087938e-01	-9.087938e-01	1.10137
CP+ _R1_binary	519.0	0.051232	1.016420	-7.164426e-01	-7.164426e-01	-7.164426e-01	1.39720
CP+ _R2_binary	519.0	0.027183	1.015128	-5.854283e-01	-5.854283e-01	-5.854283e-01	1.71020
CP+ _R3_binary	519.0	0.052618	1.037998	-4.989129e-01	-4.989129e-01	-4.989129e-01	-4.9891
CP+ _R4_binary	519.0	0.053089	1.072140	-3.231373e-01	-3.231373e-01	-3.231373e-01	-3.2313
CP+ _R5_binary	519.0	-0.002777	0.988349	-1.095614e-01	-1.095614e-01	-1.095614e-01	-1.0956
CP+ _R6_binary	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00	0.0000
CP+ _S1_binary	519.0	-0.022255	1.004187	-1.178027e+00	-1.178027e+00	8.491634e-01	8.4916
CP+ _S2_binary	519.0	-0.023408	1.008808	-1.406507e+00	-1.406507e+00	7.109814e-01	7.1098
CP+ _S3_binary	519.0	-0.021891	1.010229	-1.566745e+00	-1.566745e+00	6.389743e-01	6.3897
CP+ _S4_binary	519.0	-0.006205	1.006088	-2.129637e+00	4.695636e-01	4.695636e-01	4.6956
CP+ _S5_binary	519.0	0.003934	0.994203	-3.689625e+00	2.710302e-01	2.710302e-01	2.7103
CP+ _S6_binary	519.0	-0.056371	1.325073	-1.347838e+01	7.419291e-02	7.419291e-02	7.4192
LIN_REG_binary	519.0	-0.006559	0.681718	-4.482760e-02	-4.482760e-02	-4.482760e-02	-4.4827
LIN_REG_INTERCEPT_binary	519.0	0.029769	1.040271	-3.174868e-01	-3.174868e-01	-3.174868e-01	
OBV_binary	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00	0.00000
VROC_binary	519.0	0.038121	0.868446	3.075137e-15	3.075137e-15	3.075137e-15	3.07513
VWAP_binary	519.0	0.006948	1.001970	-8.542371e-01	-8.542371e-01	-8.542371e-01	1.17277
VWAP_CLOUD_HIGH_binary	519.0	0.040374	1.029348	-5.062162e-01	-5.062162e-01	-5.062162e-01	
VWAP_CLOUD_LOW_binary	519.0	0.028226	0.989514	-1.485410e+00	-1.485410e+00	6.753126e-01	
VWAP_L1_binary	519.0	-0.050936	1.016767	-1.408667e+00	-1.408667e+00	7.106181e-01	7.106
VWAP_L2_binary	519.0	-0.071595	1.088314	-2.990159e+00	3.352740e-01	3.352740e-01	3.352
VWAP_U1_binary	519.0	0.037214	1.030730	-4.619486e-01	-4.619486e-01	-4.619486e-01	-4.619
VWAP_U2_binary	519.0	-0.009894	0.971565	-1.854458e-01	-1.854458e-01	-1.854458e-01	-1.854
ZIGZAG_HIGH_binary	519.0	0.033597	1.453851	-3.021989e-02	-3.021989e-02	-3.021989e-02	-3.02
ZIGZAG_LOW_binary	519.0	-0.002879	1.022875	-7.498495e+00	1.410592e-01	1.410592e-01	1.4

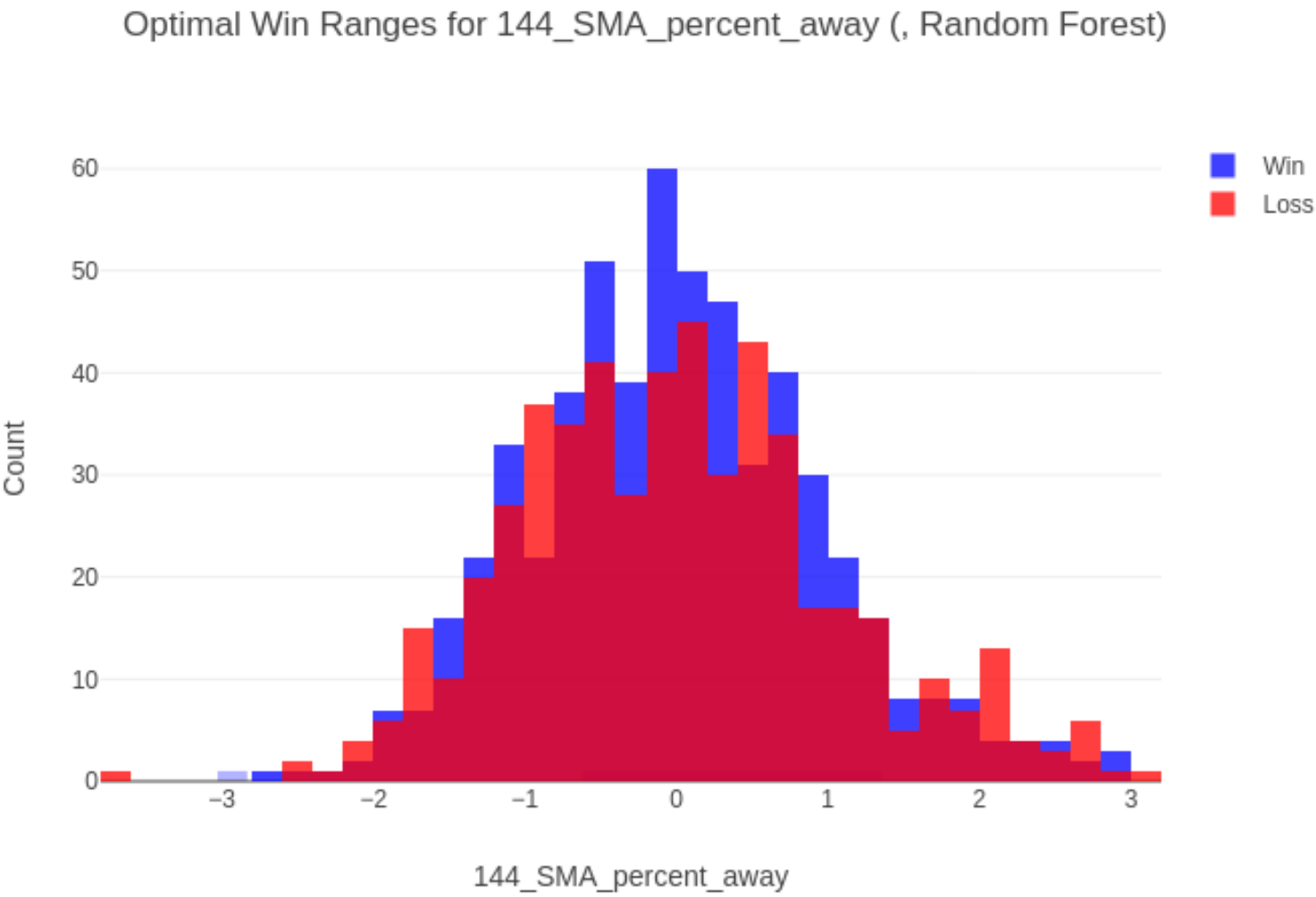
Confusion Matrix



Feature Importance

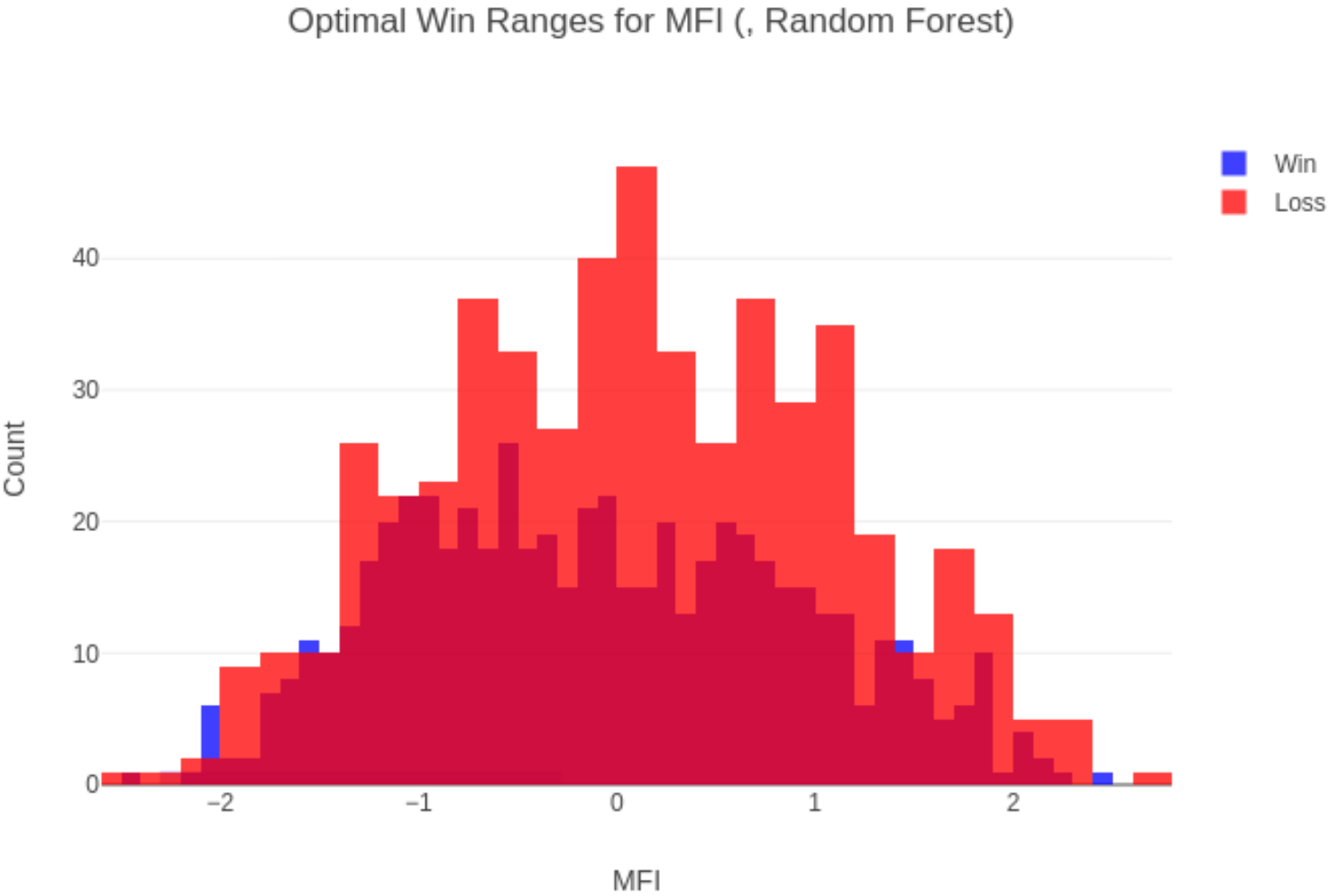


Optimal Win Ranges for 144\_SMA\_percent\_away (, Random Forest)

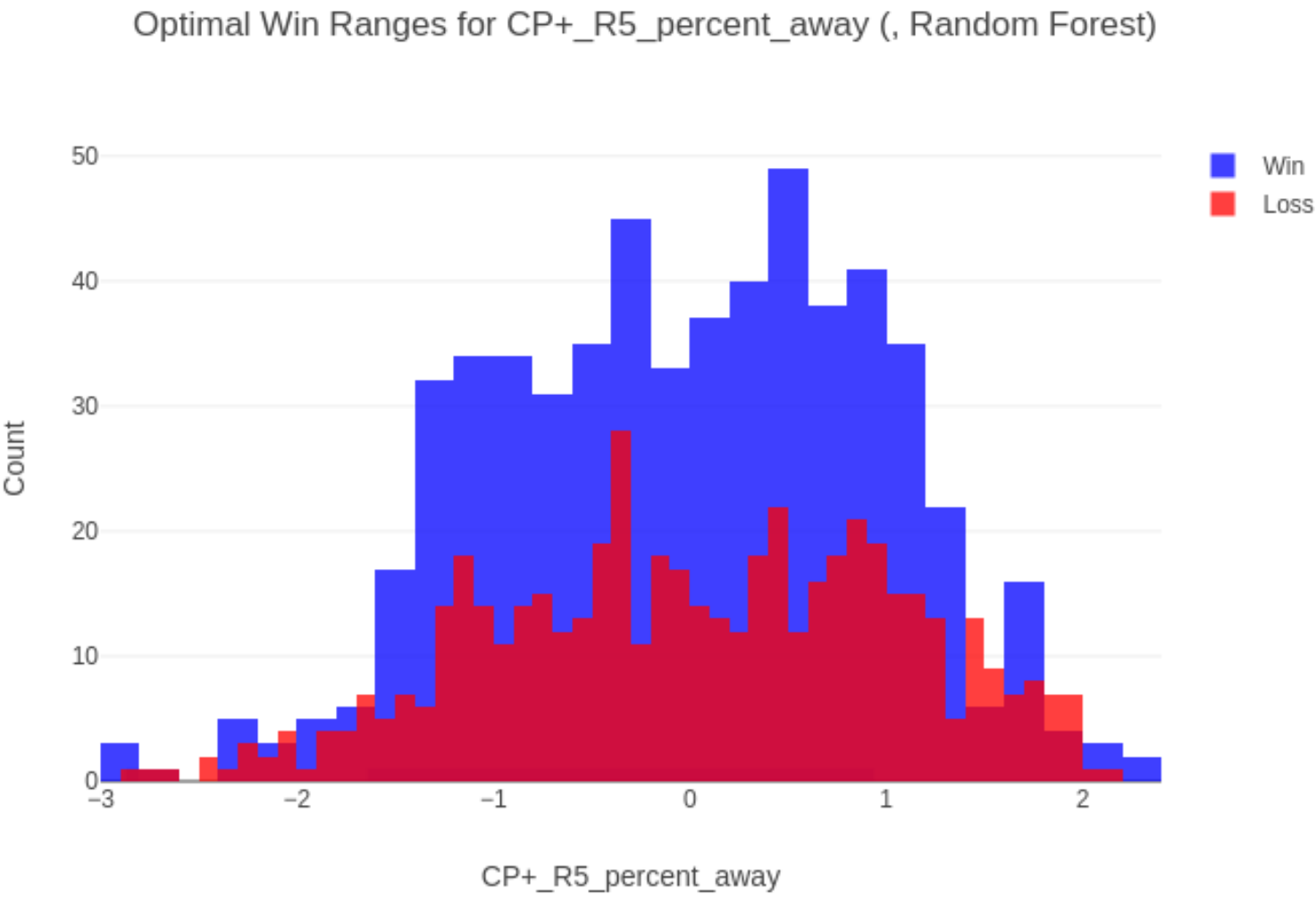




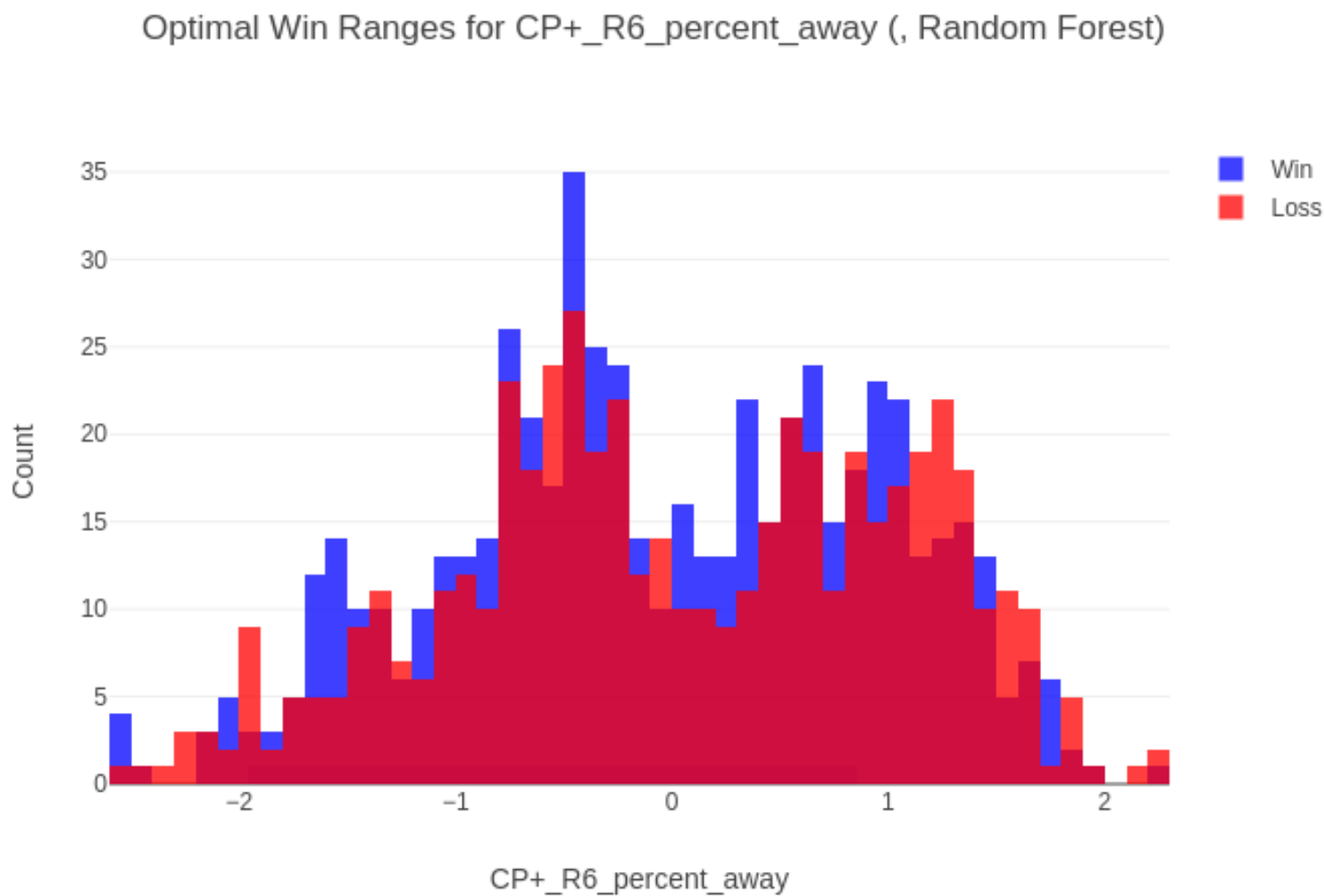
Optimal Win Ranges for MFI (, Random Forest)

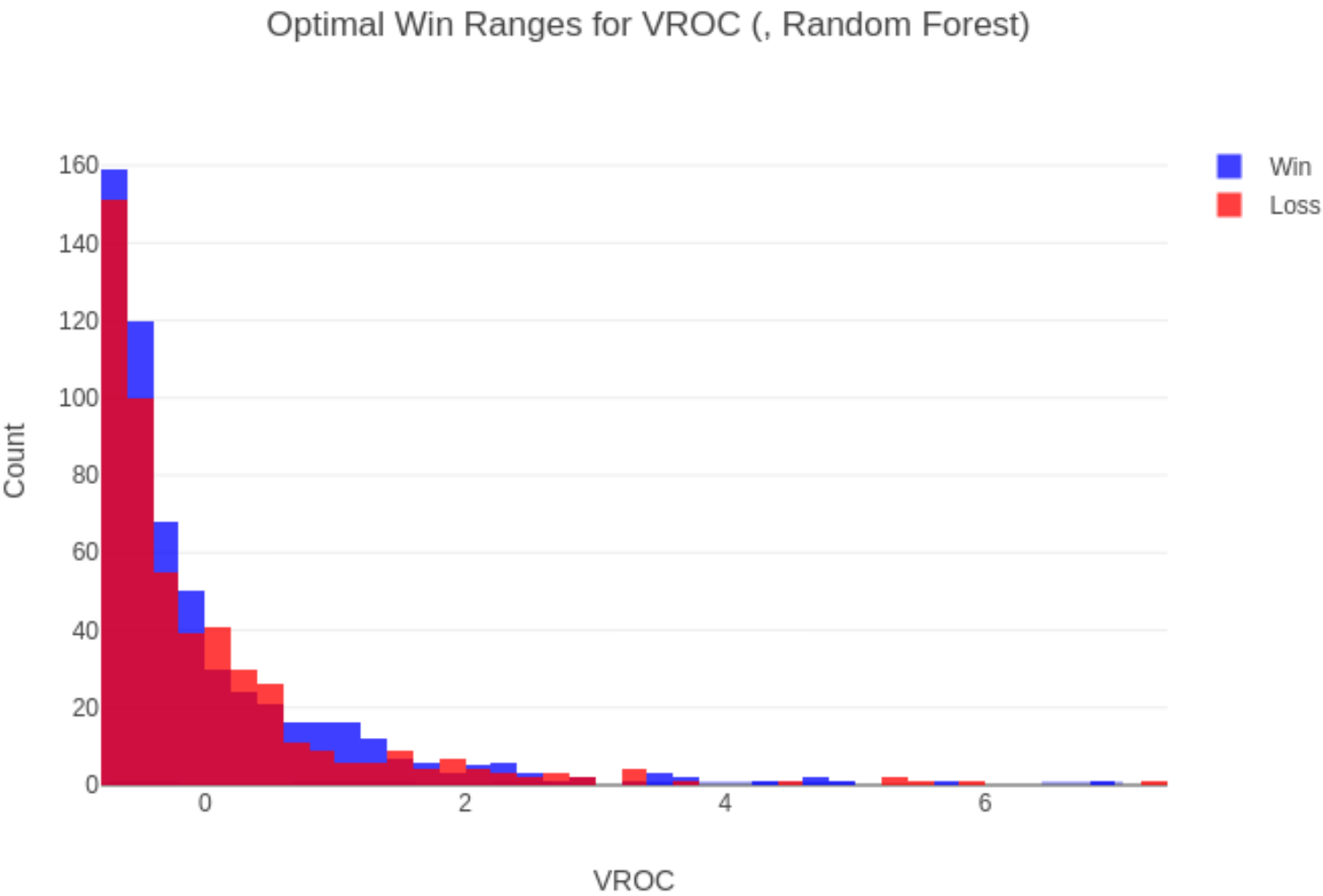


Optimal Win Ranges for CP+\_R5\_percent\_away (, Random Forest)

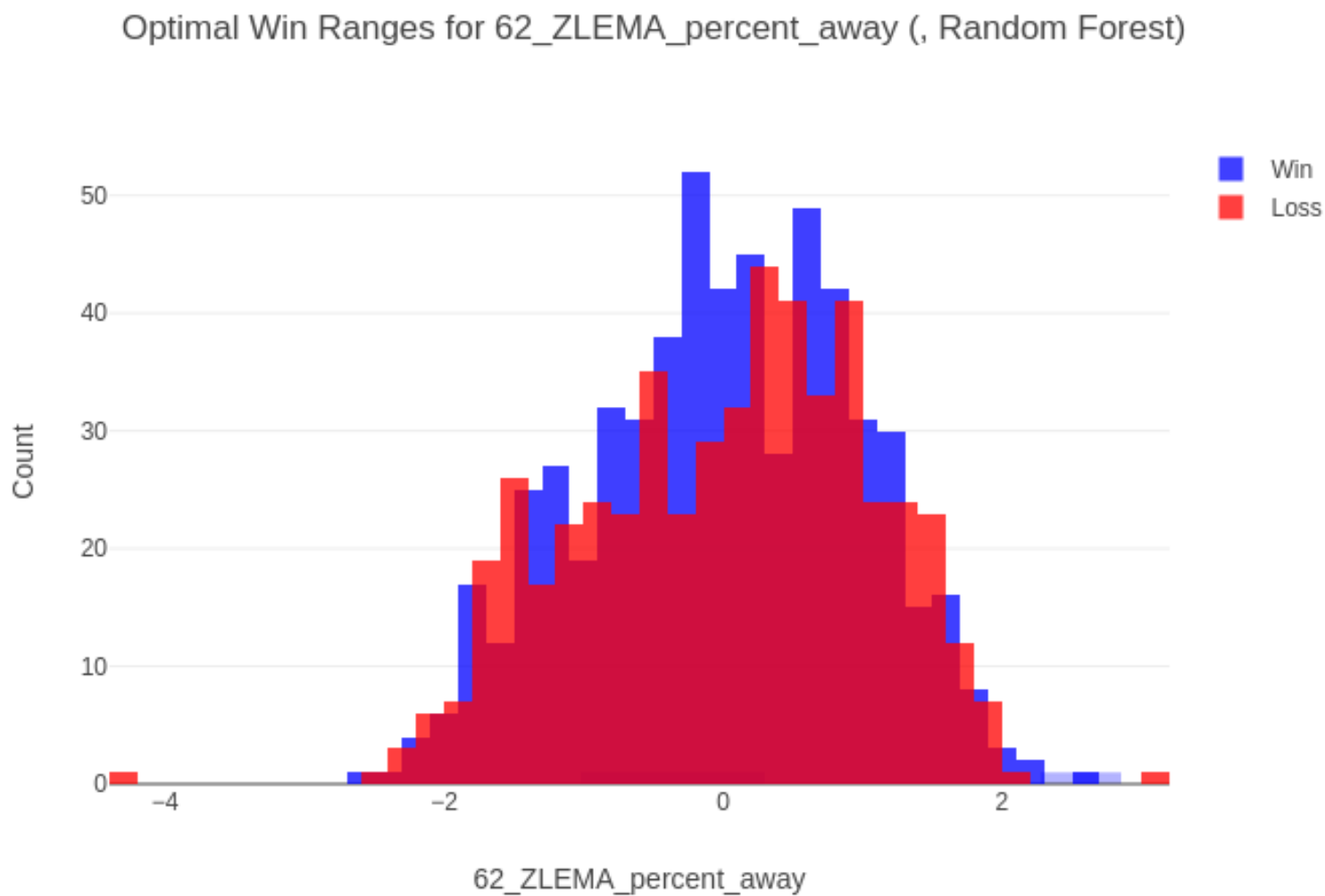


Optimal Win Ranges for CP+\_R6\_percent\_away (, Random Forest)

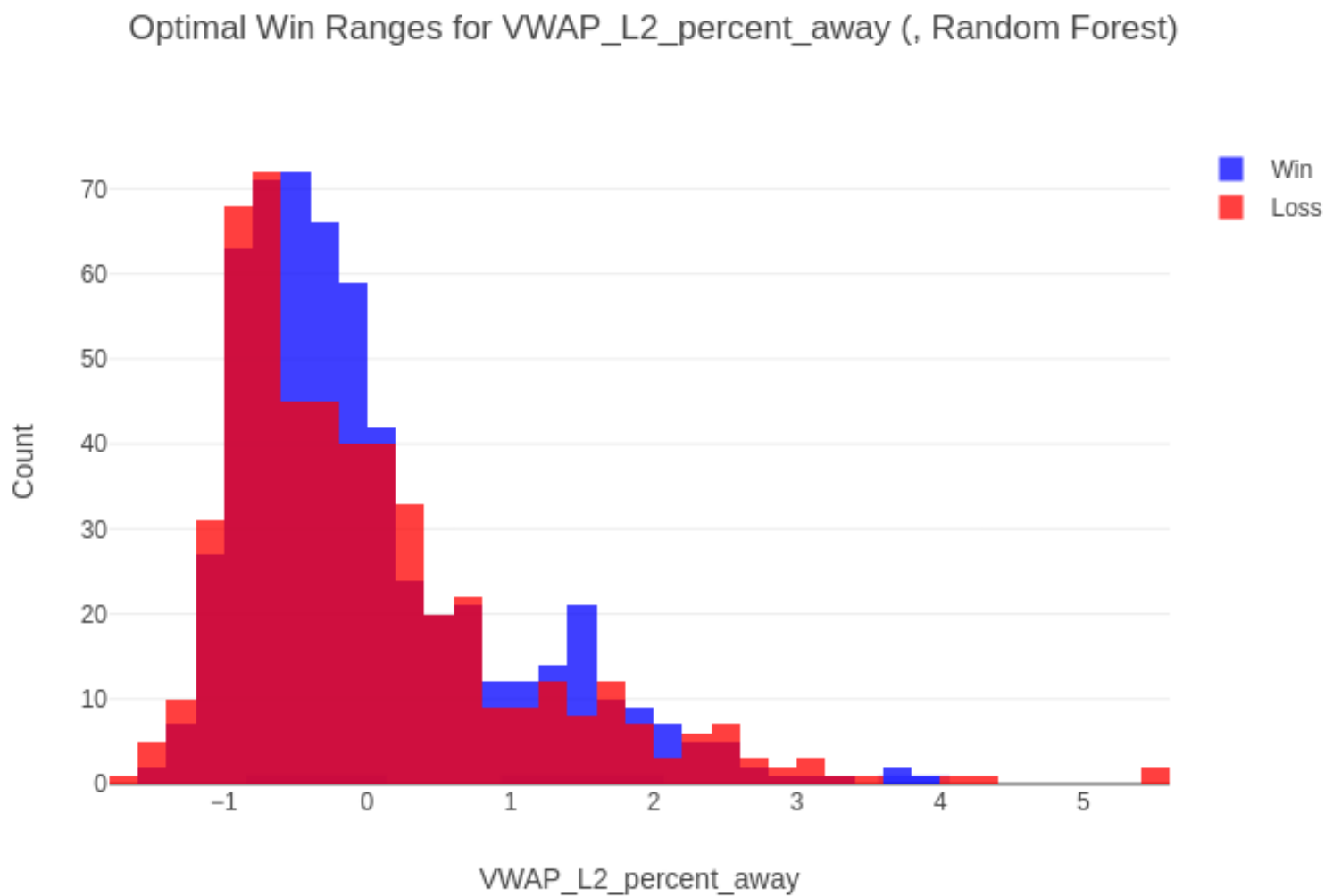




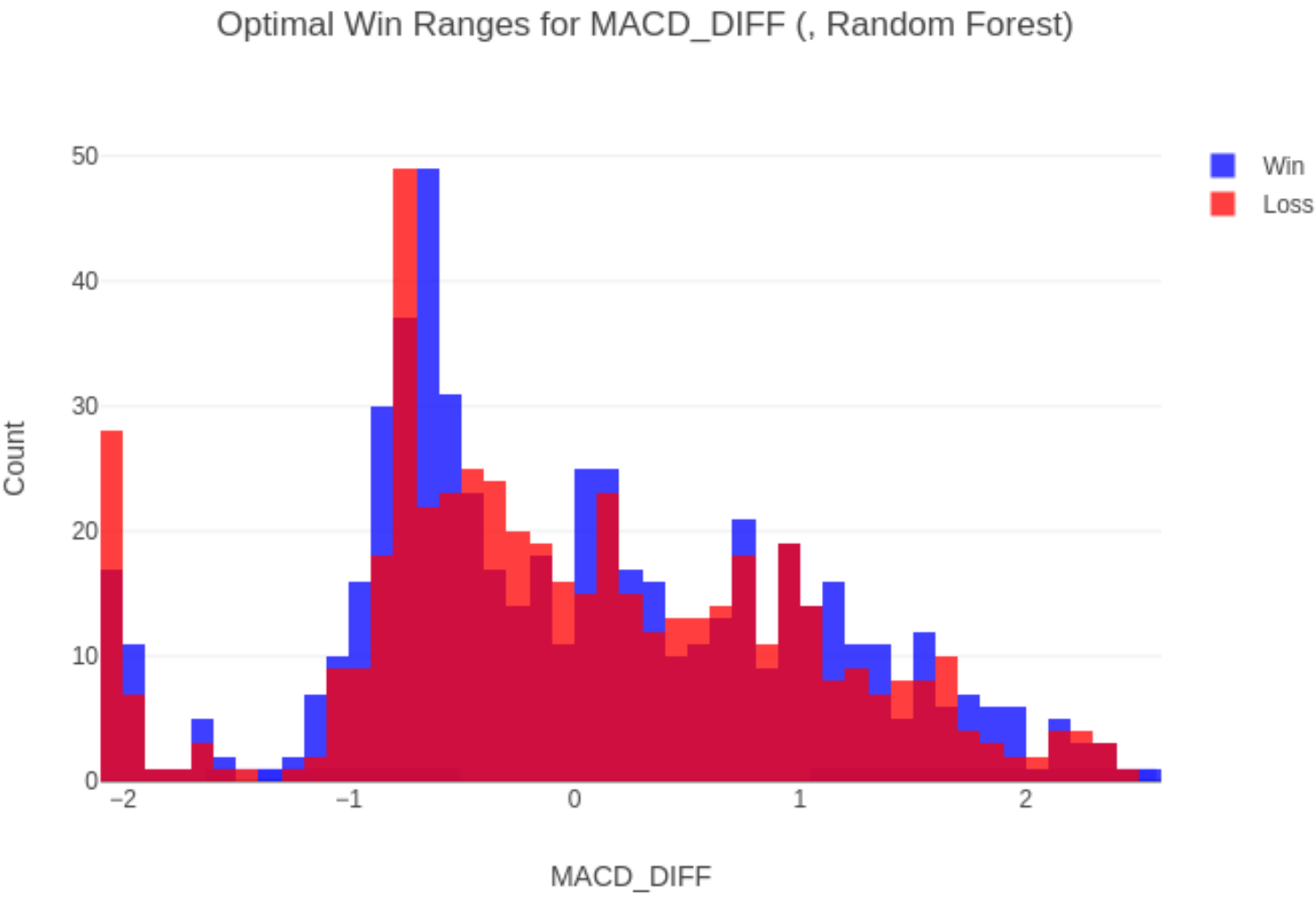
Optimal Win Ranges for 62\_ZLEMA\_percent\_away (, Random Forest)



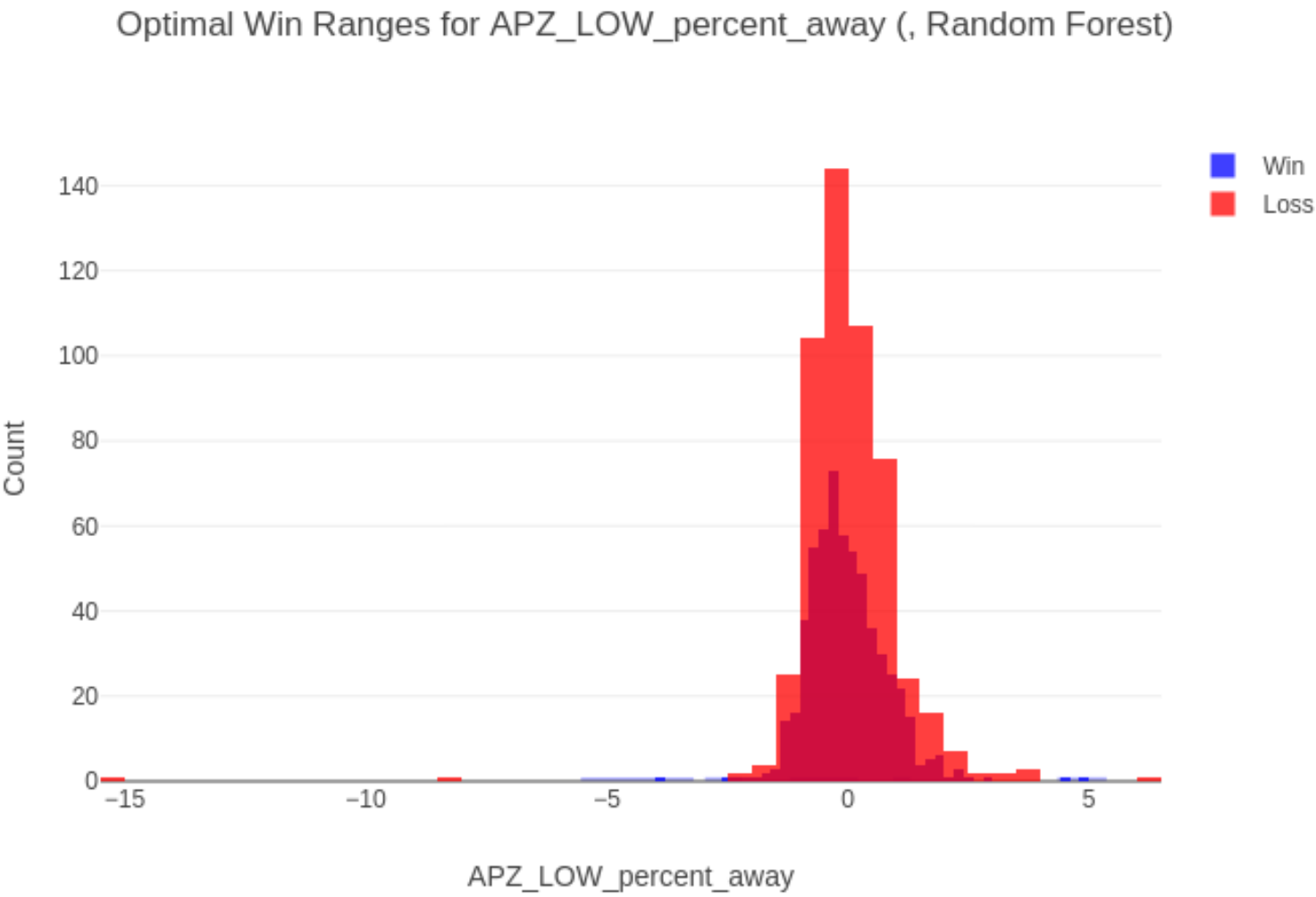
Optimal Win Ranges for VWAP\_L2\_percent\_away (, Random Forest)



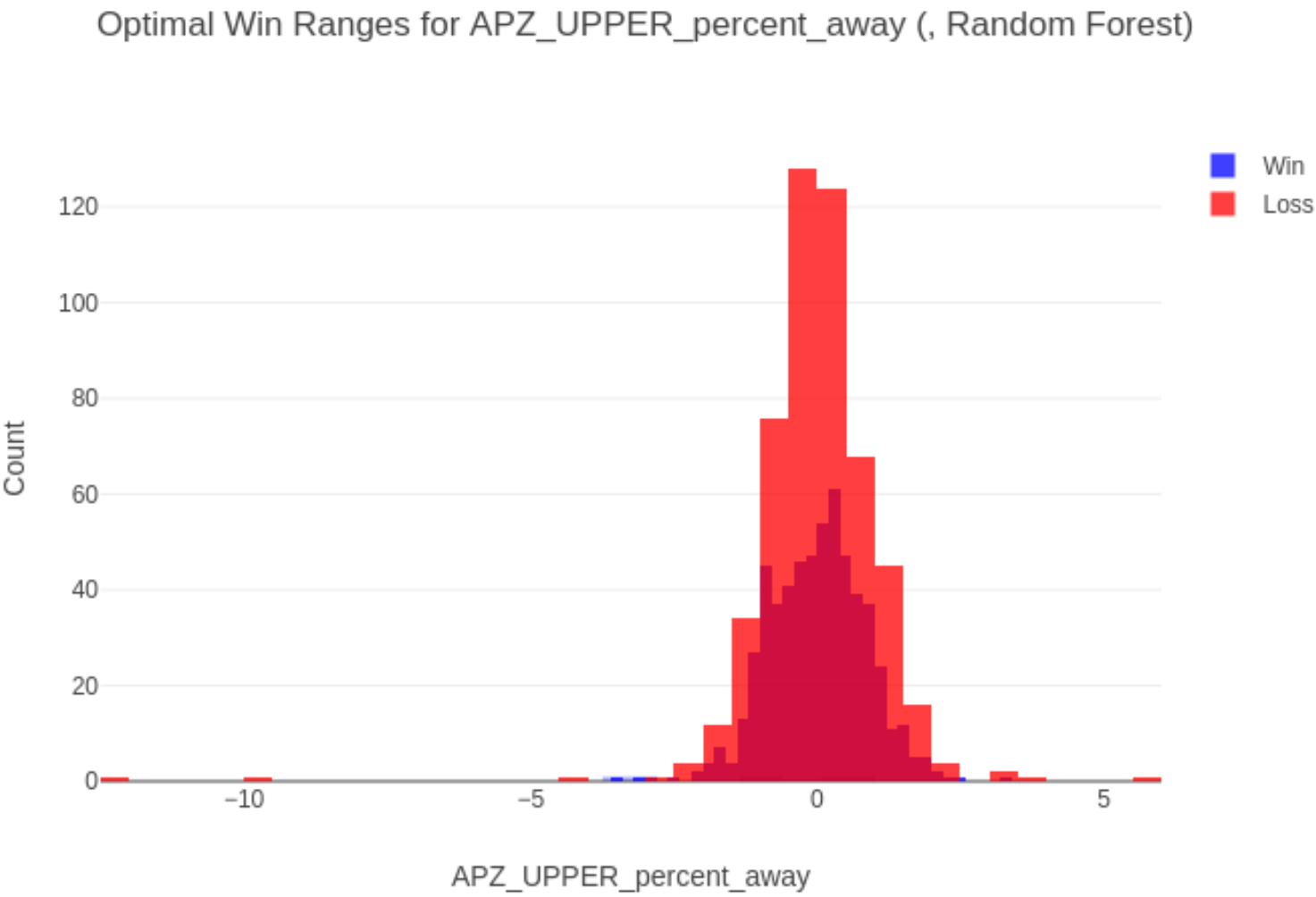
Optimal Win Ranges for MACD\_DIFF (, Random Forest)



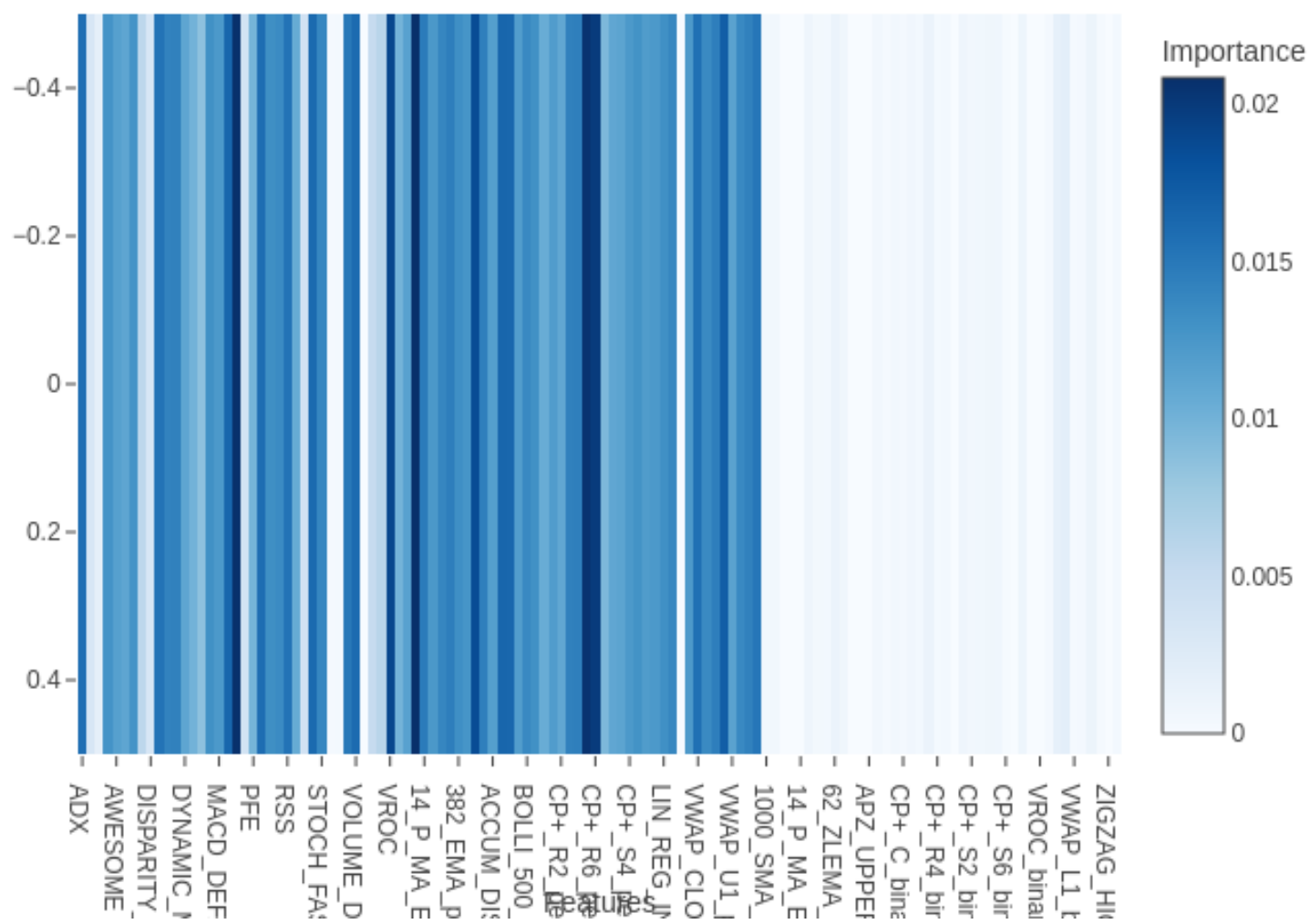
Optimal Win Ranges for APZ\_LOW\_percent\_away (, Random Forest)



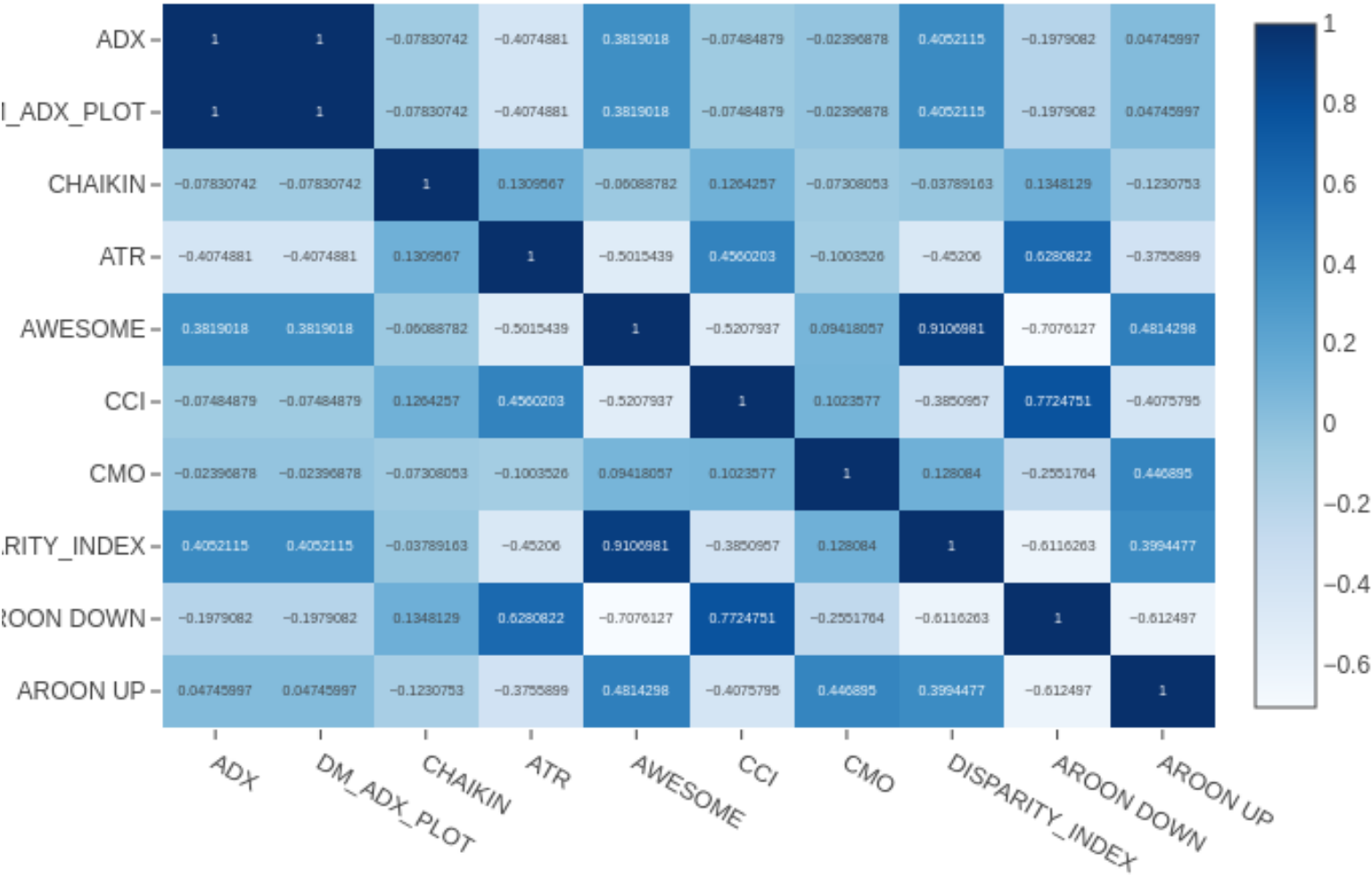




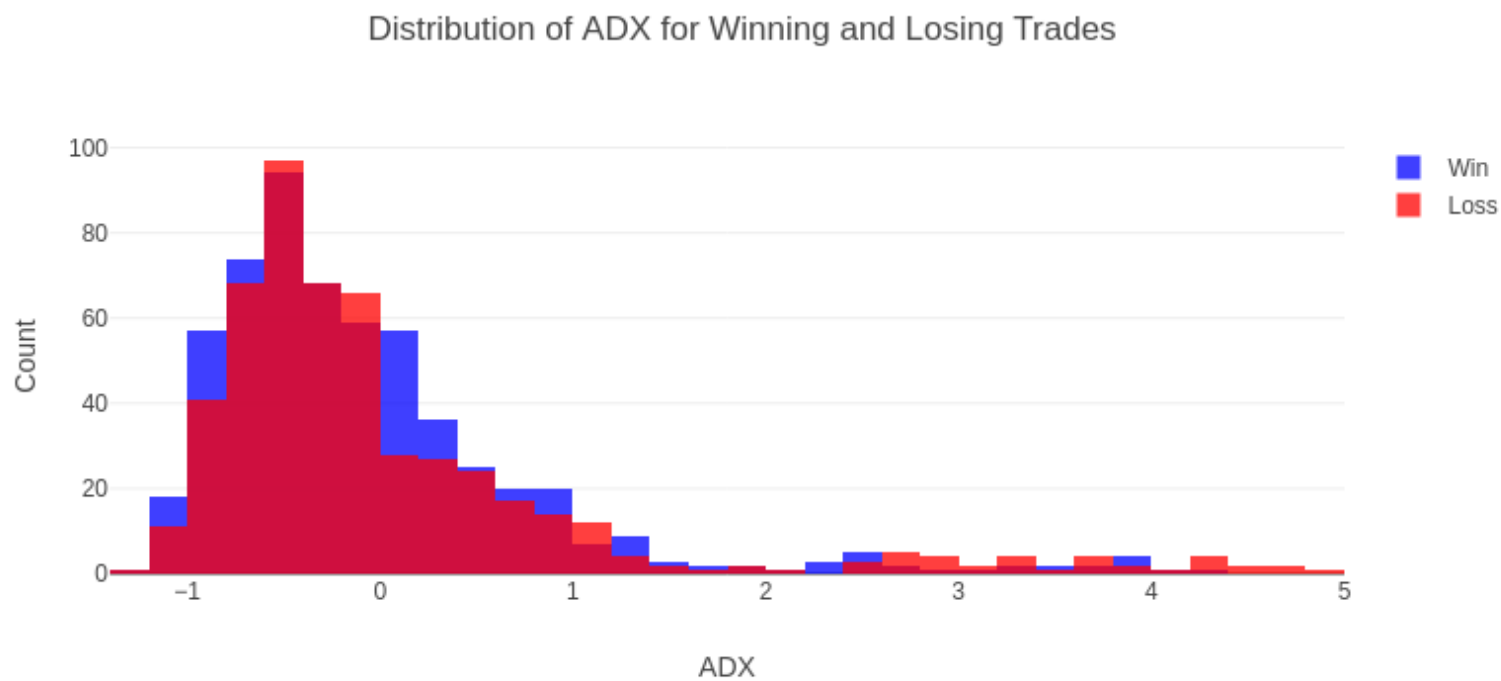
### Feature Importance Heatmap



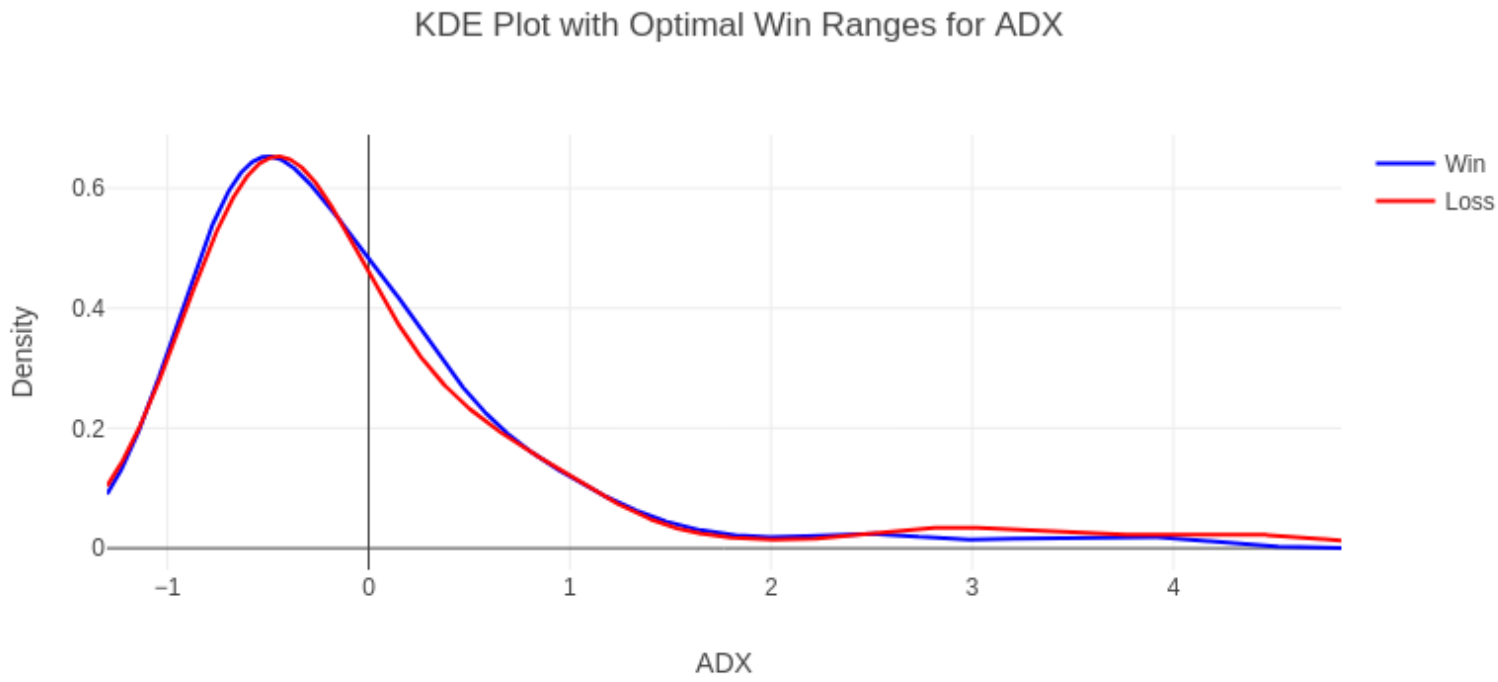
Correlation Matrix of Top Indicators



# Distribution of ADX for Winning and Losing Trades



KDE Plot with Optimal Win Ranges for ADX



Mean Indicator Values for Losses

