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: 0.4954545454545455

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-0	
AROON DOWN	519.0	-0.025067	0.988170	-9.750002e-01	-9.750002e-01	-1.968771e-01	8.404	
AROON UP	519.0	0.048243	0.961221	-2.529763e+00	2.450408e-01	4.971994e-01	4.97199	
ATR	519.0	-0.021088	0.989429	-2.967394e+00	-7.142612e-01	-9.977054e-02	6.025045e-0	
AWESOME	519.0	0.023714	1.011175	-2.522899e+00	-5.652758e-01	-8.258065e-05	6.33618	
CCI	519.0	-0.006605	1.009473	-1.955254e+00	-1.002677e+00	-1.430411e-01	7.308380e-0	
CHAIKIN	519.0	0.003999	1.045252	-7.469117e+00	-3.256318e-01	1.317977e-01	4.077193e	
CMO	519.0	0.039368	0.985227	-2.650823e+00	-6.908394e-01	-1.648854e-02	6.570537e-	
DISPARITY_INDEX	519.0	0.012683	1.029725	-2.424537e+00	-6.398215e-01	2.525361e-01	2.52	
DM_ADX_PLOT	519.0	0.050207	1.102537	-1.300359e+00	-5.836247e-01	-2.960232e-01	2.795	
DM_DI_MINUS	519.0	-0.042488	1.021084	-3.181025e+00	-6.022680e-01	4.501028e-02	6.1720	
DM_DI_PLUS	519.0	0.025463	1.040987	-3.428033e+00	-6.137158e-01	-1.824323e-02	6.7647	
DYNAMIC_MOMENTUM	519.0	0.006191	1.013629	-1.342304e+00	-8.820801e-01	1.090253e-01		
FISHER_TRANSFORM	519.0	0.022392	1.014788	-2.428263e+00	-1.006639e+00	1.677460e-01	9	
LIN_REG_SLOPE	519.0	0.028825	1.006049	-2.388261e+00	-1.123786e+00	-2.597279e-01	9.83	
MACD_AVG	519.0	0.011953	1.011684	-2.463441e+00	-6.707324e-01	9.380799e-03	5.69160	
MACD_DEFAULT	519.0	0.012869	1.014948	-2.418966e+00	-6.408845e-01	-3.092020e-02	5.69	
MACD_DIFF	519.0	-0.008747	1.000811	-2.095056e+00	-7.028151e-01	-1.169398e-01	7.27224	
MFI	519.0	0.092006	1.002361	-2.410603e+00	-6.577771e-01	1.125880e-01	8.222717e-0	
MOMENTUM	519.0	0.043404	0.966016	-3.435090e+00	-3.271072e-01	1.168903e-01	5.6088	
PFE	519.0	0.022506	1.005431	-2.435360e+00	-5.285676e-01	2.016932e-01	5.262536e-0	
RIND	519.0	-0.018288	0.977202	-1.401491e+00	-7.597845e-01	-3.185242e-01	6.707156e-	
RSI_AVERAGE	519.0	0.012255	1.028327	-1.811083e+00	-6.816188e-01	-2.028101e-01	5.370	
RSI_DEFAULT	519.0	0.022087	1.032960	-1.795899e+00	-6.204616e-01	-1.119393e-01	8.3007	
RSS	519.0	0.016666	0.989047	-4.792159e+00	-5.625098e-01	8.903767e-02	6.864856e-0	
RVI	519.0	0.011001	1.021750	-2.496300e+00	-6.733139e-01	4.085737e-02	5.609479e-0	
R_SQUARED	519.0	0.000201	0.992668	-2.161233e+00	-8.207832e-01	2.515765e-01	1.1005	
STOCH_FAST_D	519.0	-0.027256	0.988641	-1.457680e+00	-6.422925e-01	-2.398738e-01	5.76	
STOCH_FAST_K	519.0	-0.000168	1.019995	-2.111148e+00	-7.287767e-01	3.957629e-02	8.36	
TRIX_DEFAULT	519.0	0.044055	1.081288	-2.508622e-01	-2.508622e-01	-2.508622e-01	-2.5086	
TRIX_SIGNAL	519.0	0.042840	1.079781	-4.414297e+00	-2.387479e-01	-2.387479e-01	-2.3874	
VOLUME	519.0	-0.051153	0.958031	-5.772758e-01	-5.365999e-01	-4.633832e-01	-1.088246	
VOLUME_DOWN	519.0	-0.051153	0.958031	-5.772758e-01	-5.365999e-01	-4.633832e-01	-1.08	
VOLUME_UP	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00	0.000	
VORTEX_MINUS	519.0	-0.001079	1.009812	-3.170790e+00	-7.953148e-01	-2.014460e-01	3.92	
VORTEX_PLUS	519.0	0.017819	0.989620	-3.005169e+00	-7.064172e-01	2.130835e-01	6.728	
VROC	519.0	-0.000683	1.016312	-7.479597e-01	-6.283425e-01	-3.710378e-01	2.048720e-	
WILLIAMS_%R	519.0	-0.000168	1.019997	-2.111152e+00	-7.287735e-01	3.958357e-02	8.3670	
1000_SMA_percent_away	519.0	-0.031188	1.026108	-2.658925e+00	-7.188174e-01	-1.674576e-02	6	
144_SMA_percent_away	519.0	0.000167	1.055427	-3.640062e+00	-7.762678e-01	-4.825179e-02	6.	
14_P_MA_ENVELOPES_LOWER_percent_away	519.0	0.015819	1.078132	-1.030632e+01	-7.605997e-01	-8.2		
14_P_MA_ENVELOPES_MID_percent_away	519.0	0.015823	1.078107	-1.030506e+01	-7.614786e-01	-4.611		
14_P_MA_ENVELOPES_UPPER_percent_away	519.0	0.015894	1.078173	-1.030722e+01	-7.620584e-01	-7.4		
236_EMA_percent_away	519.0	-0.014582	1.054022	-3.237817e+00	-6.943256e-01	-2.851122e-02	6.	
382_EMA_percent_away	519.0	-0.020361	1.046772	-3.292389e+00	-7.163878e-01	-2.356824e-02	6.	
618_EMA_percent_away	519.0	-0.023928	1.039040	-2.949323e+00	-6.883537e-01	-5.873677e-03	6.	
62_ZLEMA_percent_away	519.0	0.011045	1.039921	-4.339719e+00	-7.817056e-01	1.490741e-01	8	
8_ZLEMA_percent_away	519.0	0.017576	1.022453	-5.775749e+00	-6.550347e-01	1.877232e-01	8.	
ACCUM_DIST_percent_away	519.0	0.028407	0.976634	-1.648087e+00	-1.054554e+00	2.032439e-01		
APZ_LOW_percent_away	519.0	0.019620	1.165531	-1.520714e+01	-5.247602e-01	-8.365246e-02	5	
APZ_UPPER_percent_away	519.0	-0.000004	1.145690	-1.247629e+01	-5.065265e-01	9.432796e-03		
BOLLI_500_P_LOWER_percent_away	519.0	-0.012195	1.036672	-2.317786e+00	-7.882211e-01	-1.502274		
BOLLI_500_P_MID_percent_away	519.0	-0.017831	1.031365	-3.538163e+00	-7.134009e-01	2.693896e-0		
BOLLI_500_P_UPPER_percent_away	519.0	-0.021912	1.023375	-4.443134e+00	-5.904578e-01	1.630520e		
CP+_C_percent_away	519.0	-0.000050	1.032295	-2.934605e+00	-5.236507e-01	1.806413e-02	5.30	
CP+_R1_percent_away	519.0	0.004026	1.035411	-2.884883e+00	-5.486237e-01	3.884438e-02	5.1	
CP+_R2_percent_away	519.0	0.008144	1.037935	-2.834954e+00	-5.468014e-01	5.216149e-02	5.8	
CP+_R3_percent_away	519.0	0.012217	1.039755	-2.823692e+00	-5.884343e-01	8.193059e-02	6.0	
CP+_R4_percent_away	519.0	0.023426	1.040688	-2.878152e+00	-6.850631e-01	9.988870e-02	7.1	
CP+_R5_percent_away	519.0	0.036294	1.032086	-2.832033e+00	-7.336998e-01	6.026349e-02	8.5	
CP+_R6_percent_away	519.0	0.044624	1.017609	-2.550141e+00	-6.526626e-01	-1.574535e-02	9.1	
CP+_S1_percent_away	519.0	-0.004010	1.028737	-2.964606e+00	-5.258892e-01	2.137780e-02	5.0	
CP+_S2_percent_away	519.0	-0.007792	1.024905	-2.976215e+00	-5.539166e-01	1.860125e-02	5.3	

Loss Mitigation Analysis

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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	-2.020967e
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	5.28
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	-5.004314e
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	0.0000
14_P_MA_ENVELOPES_MID_binary	519.0	0.038619	1.260341	-6.332923e-02	-6.332923e-02	-6.332923e
14_P_MA_ENVELOPES_UPPER_binary	519.0	0.000000	0.000000	0.000000e+00	0.000000e+00	0.00000
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	-4.6505
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	-4.98912
CP+_R4_binary	519.0	0.053089	1.072140	-3.231373e-01	-3.231373e-01	-3.231373e-01	-3.23137
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	2.71030
CP+_S6_binary	519.0	-0.056371	1.325073	-1.347838e+01	7.419291e-02	7.419291e-02	7.41929
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	3.075137
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	3.3527
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
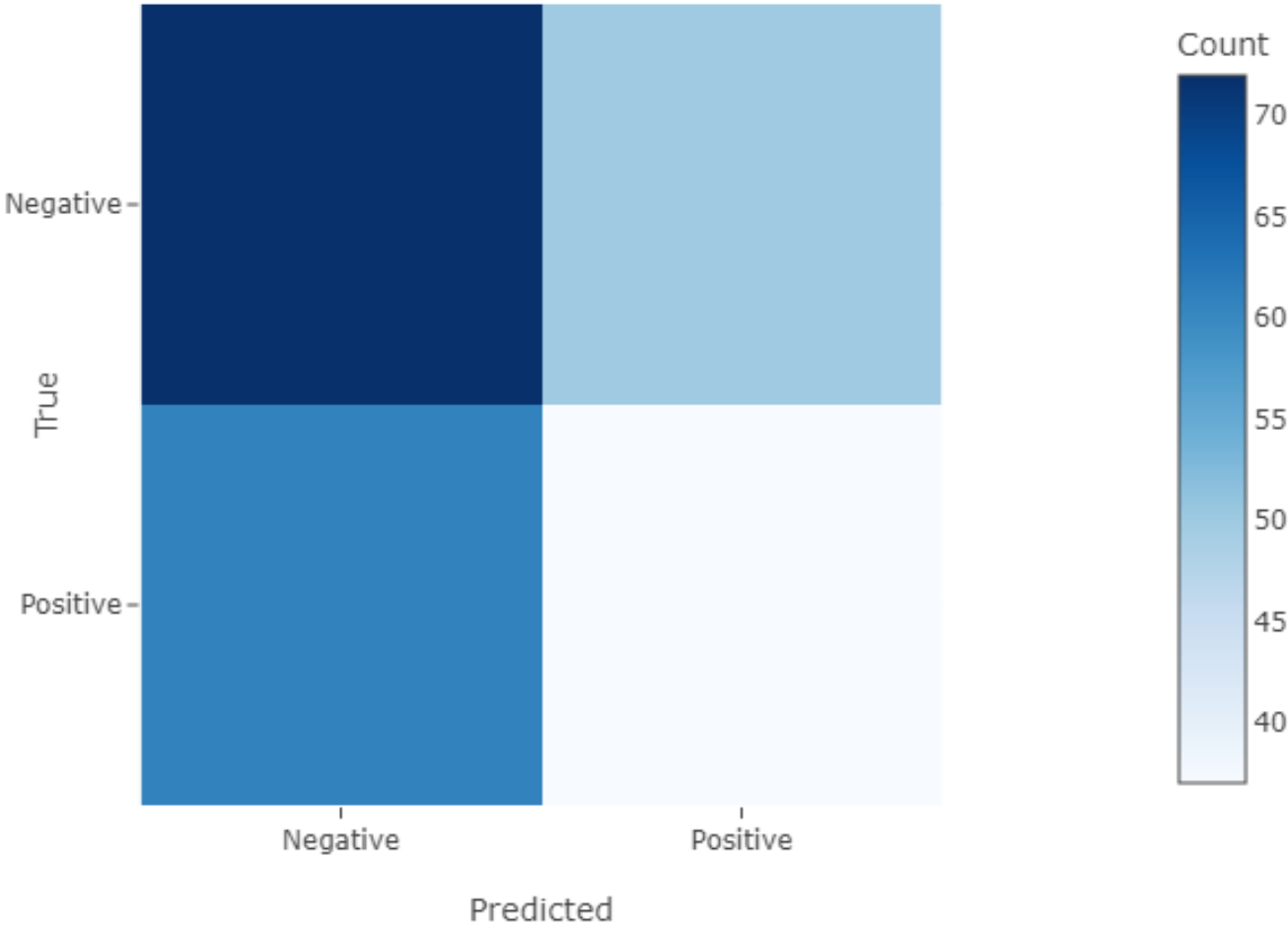
Feature Importance
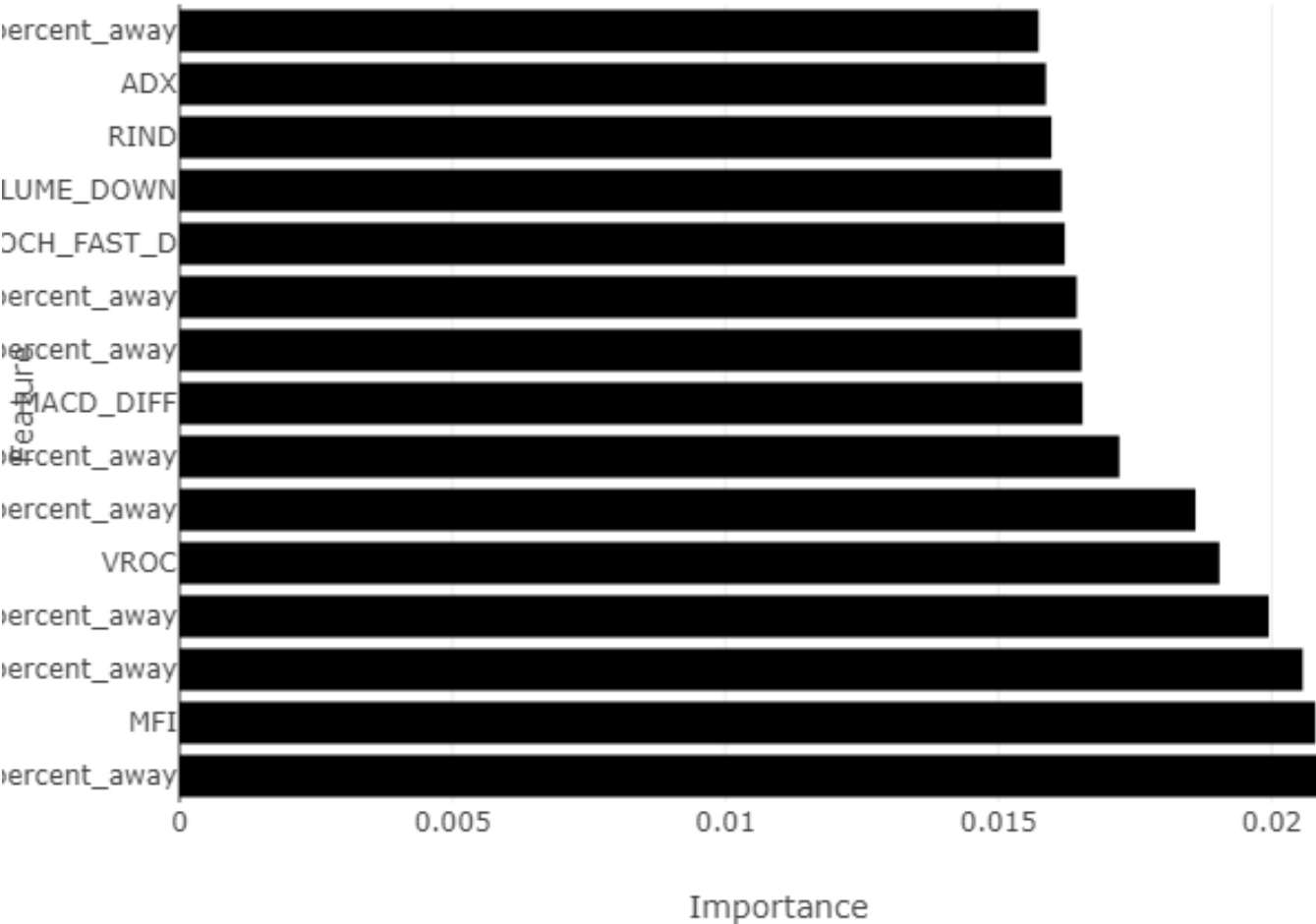
Optimal Win Ranges for 144_SMA_percent_away (, Random Forest)
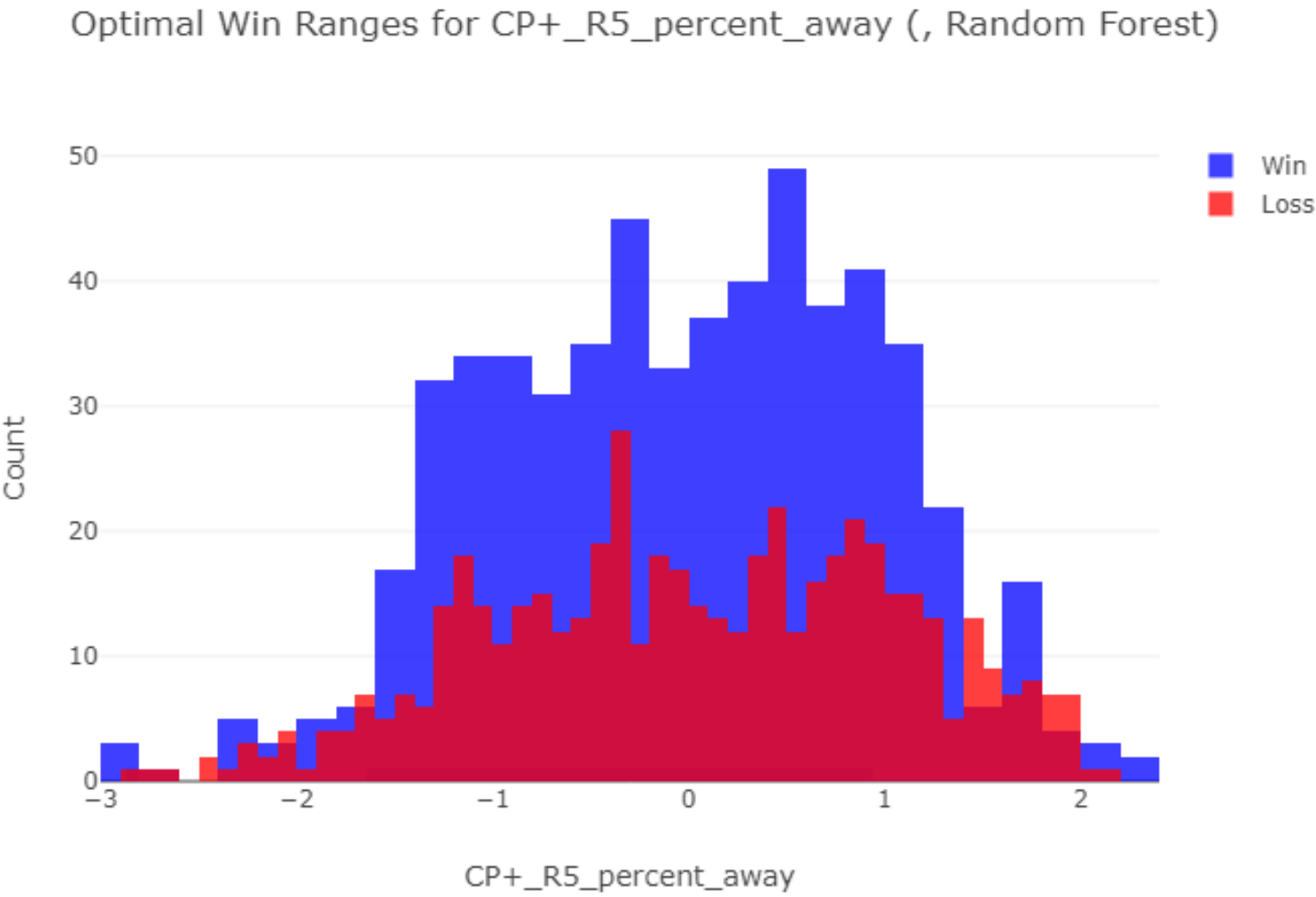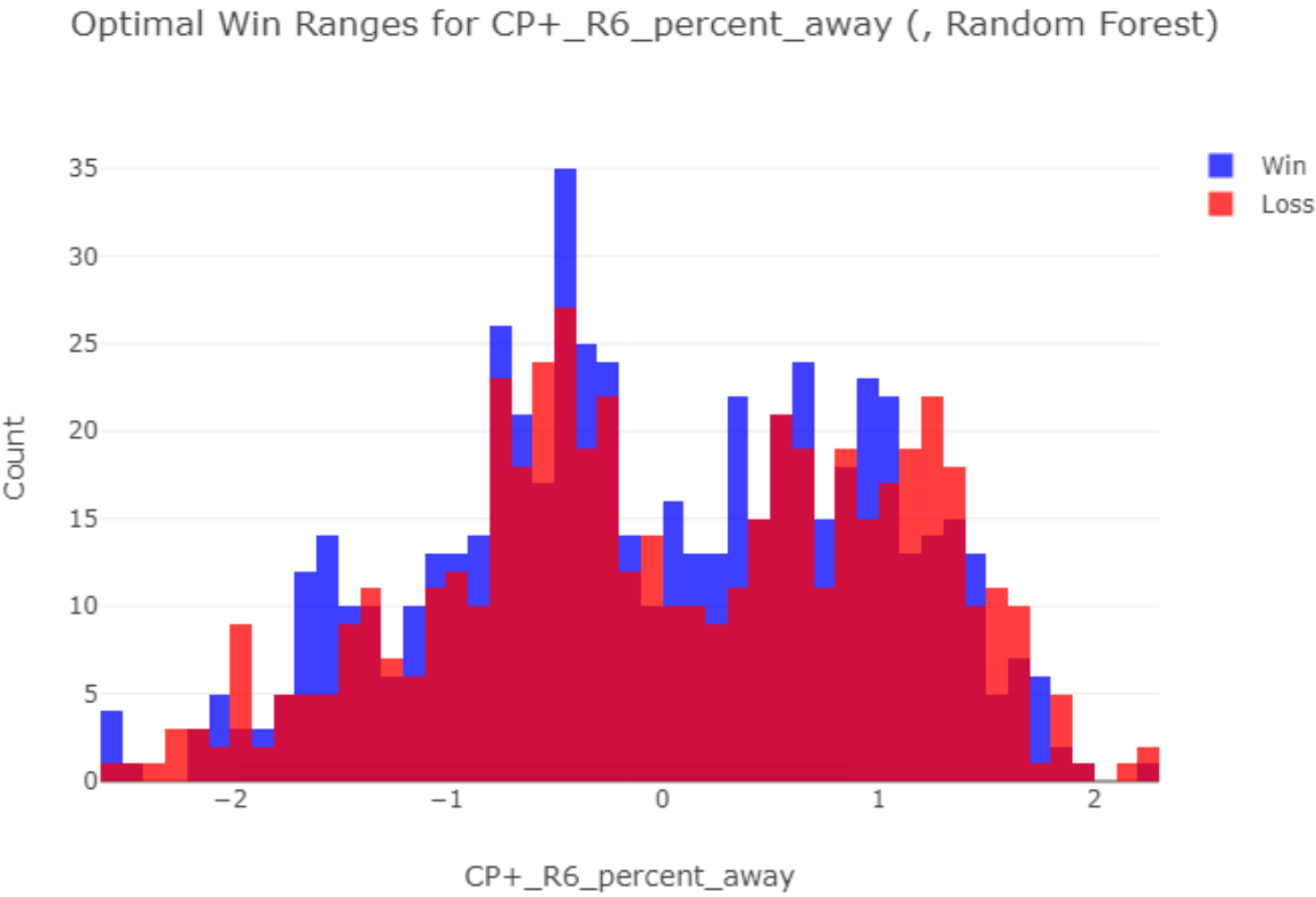
Optimal Win Ranges for MFI (, Random Forest)
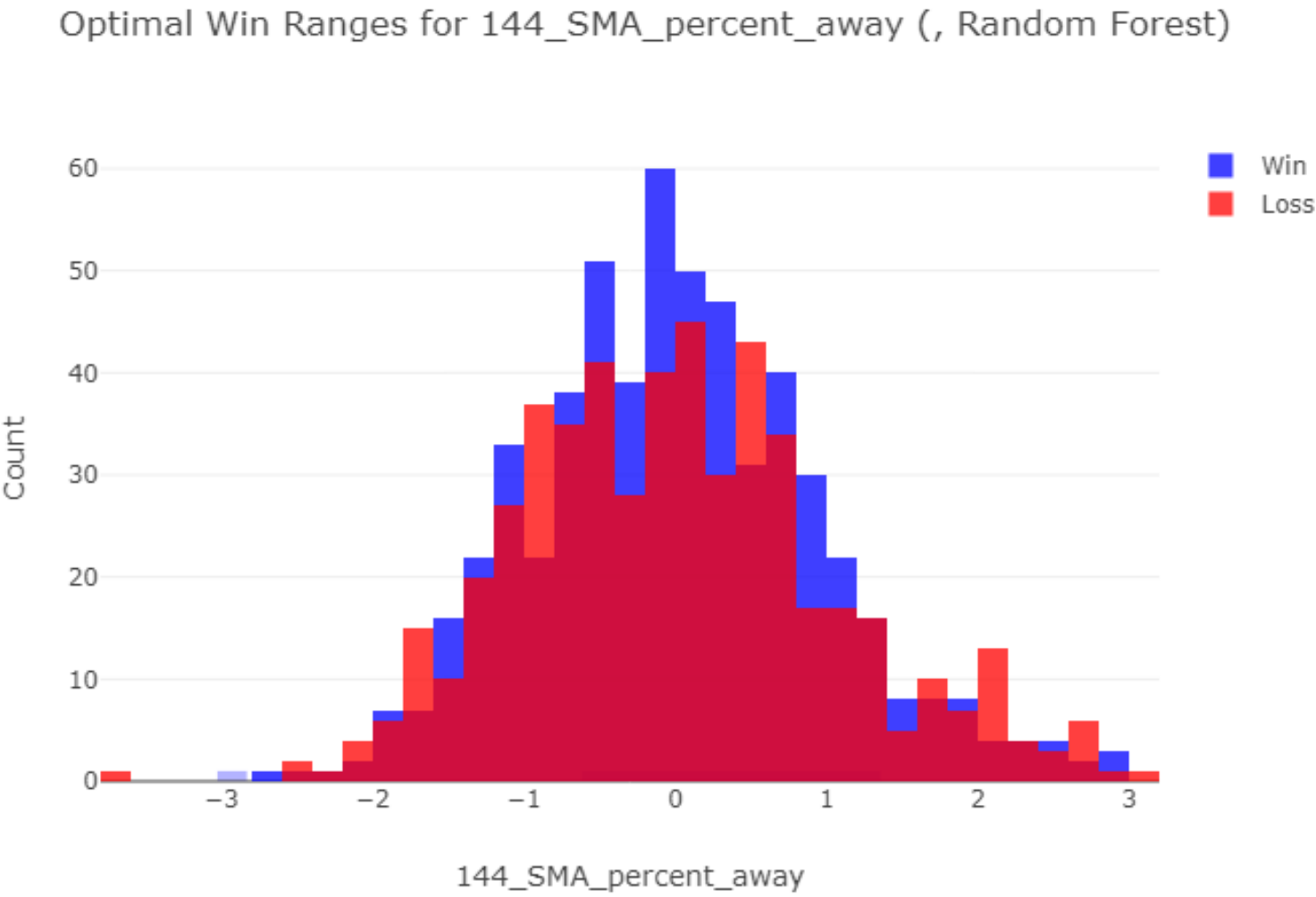
Optimal Win Ranges for MFI (, Random Forest)
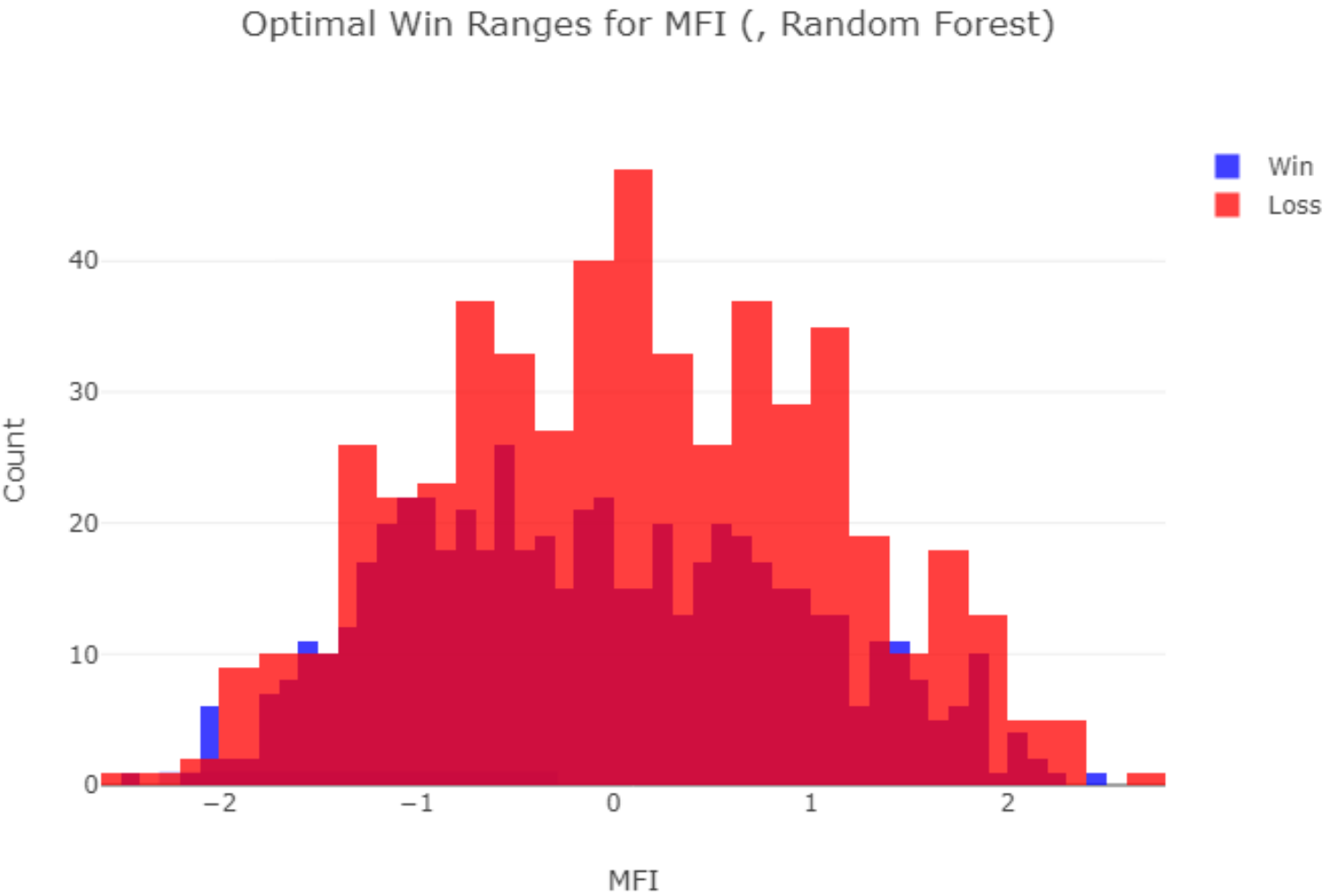
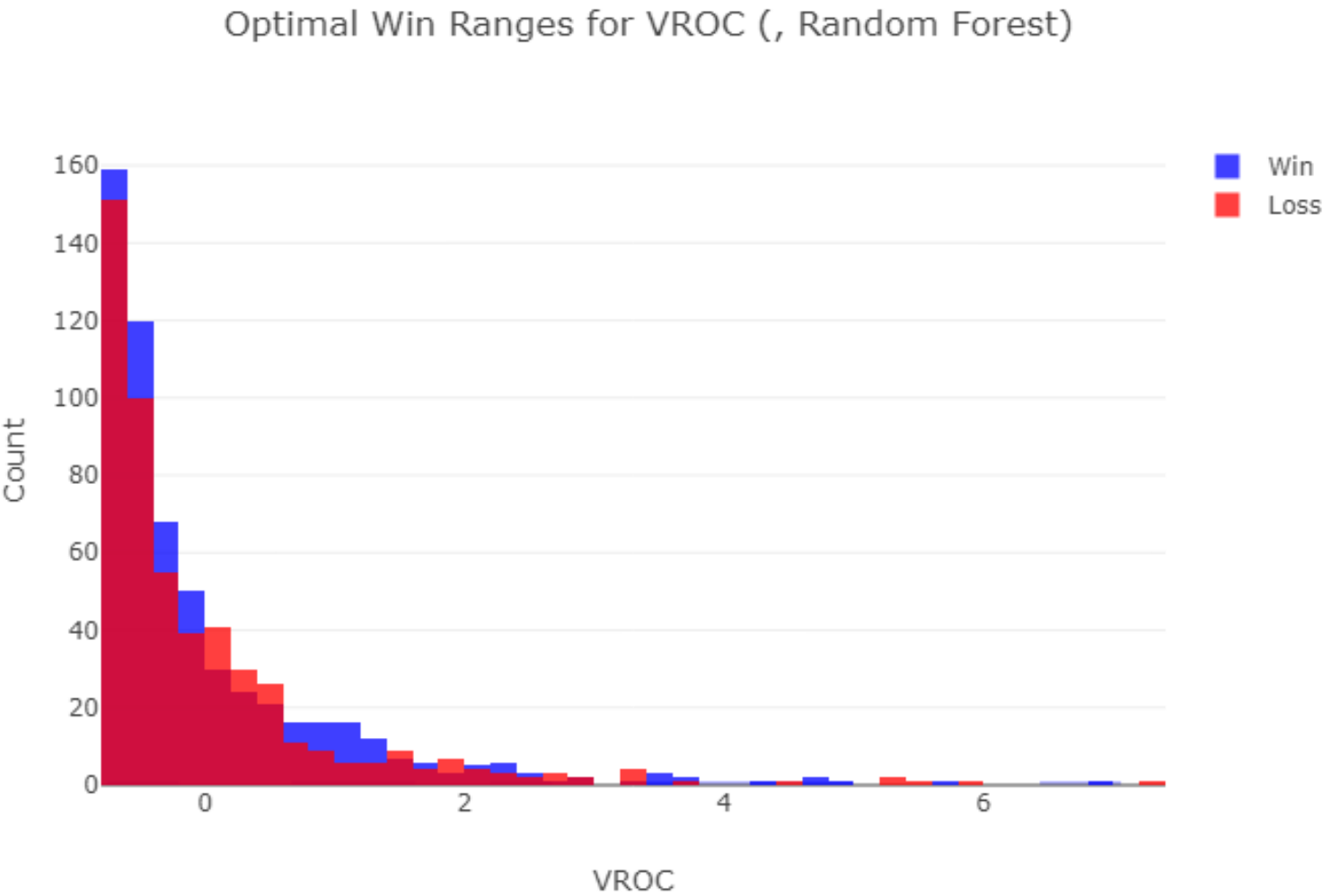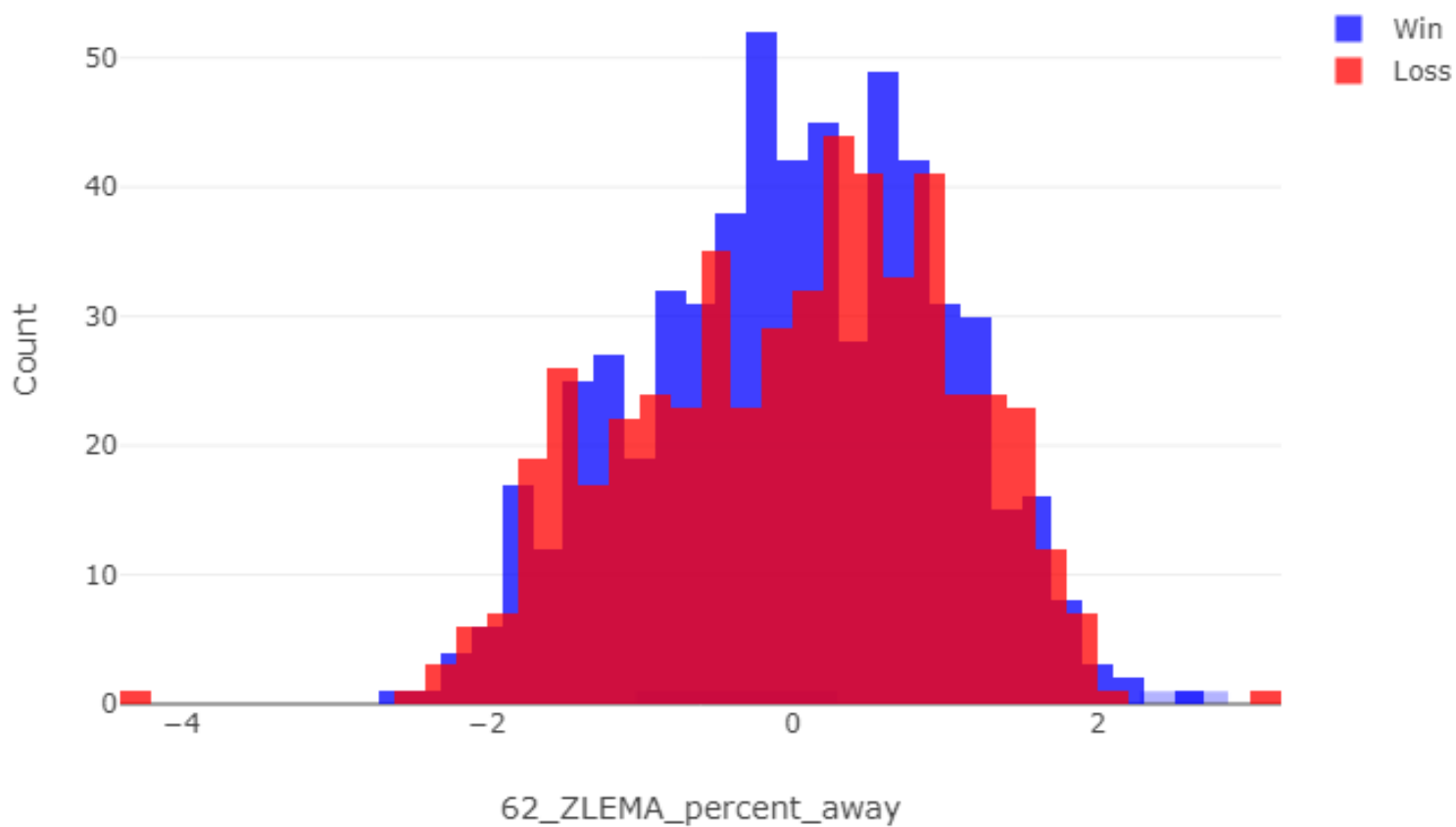Optimal Win Ranges for CP+_R5_percent_away (, Random Forest)

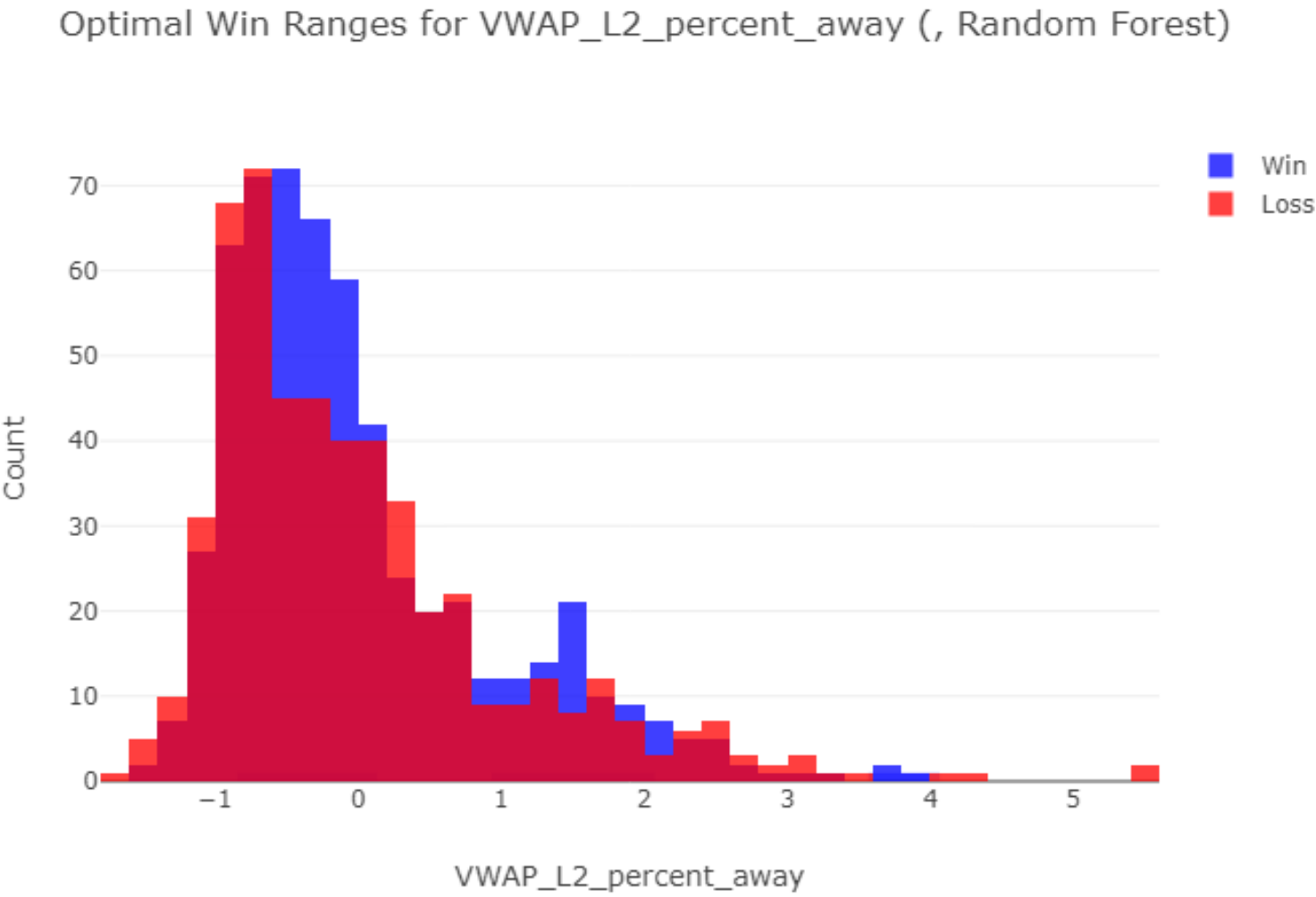Optimal Win Ranges for CP+_R6_percent_away (, Random Forest)
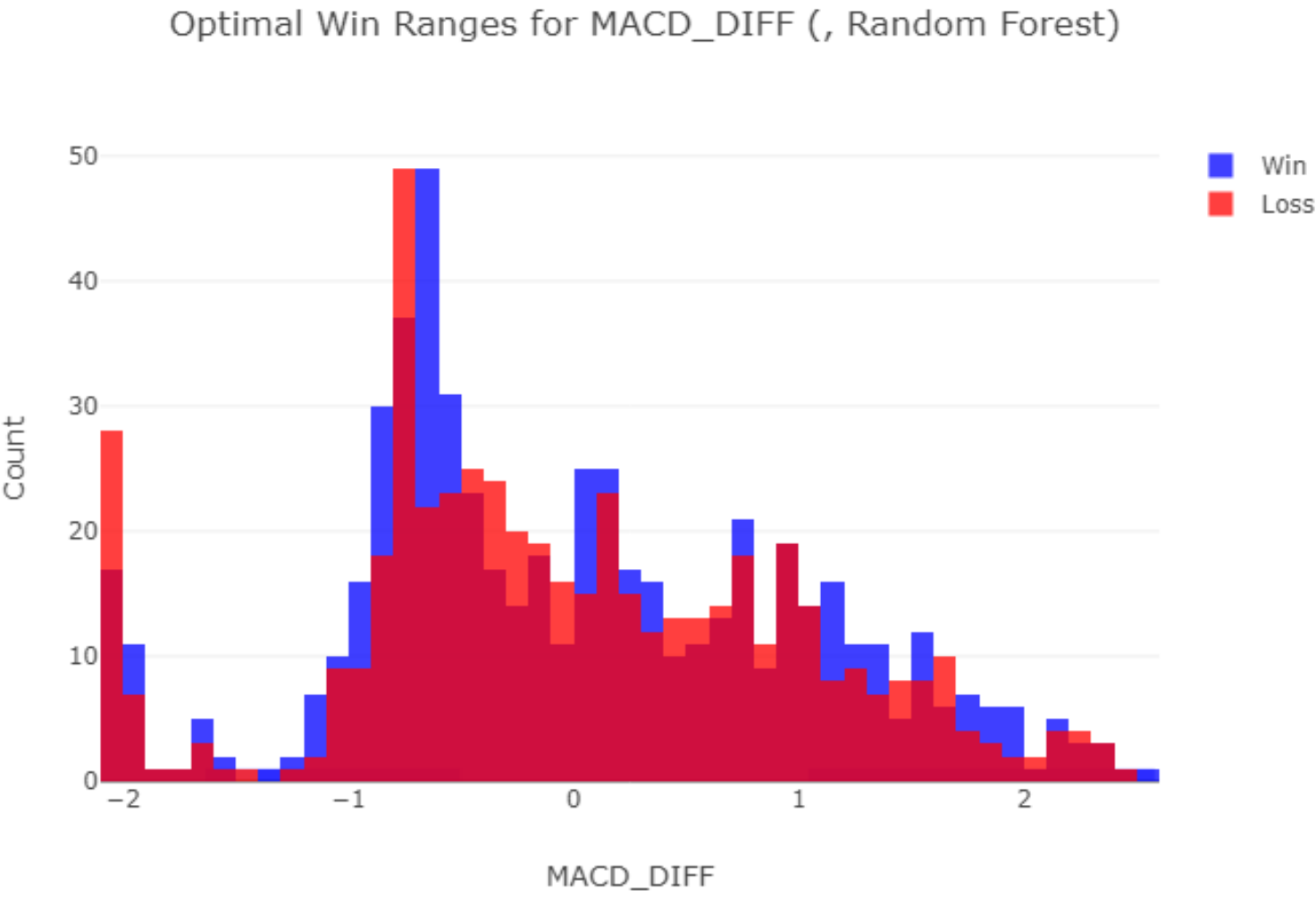
Optimal Win Ranges for VROC (, Random Forest)

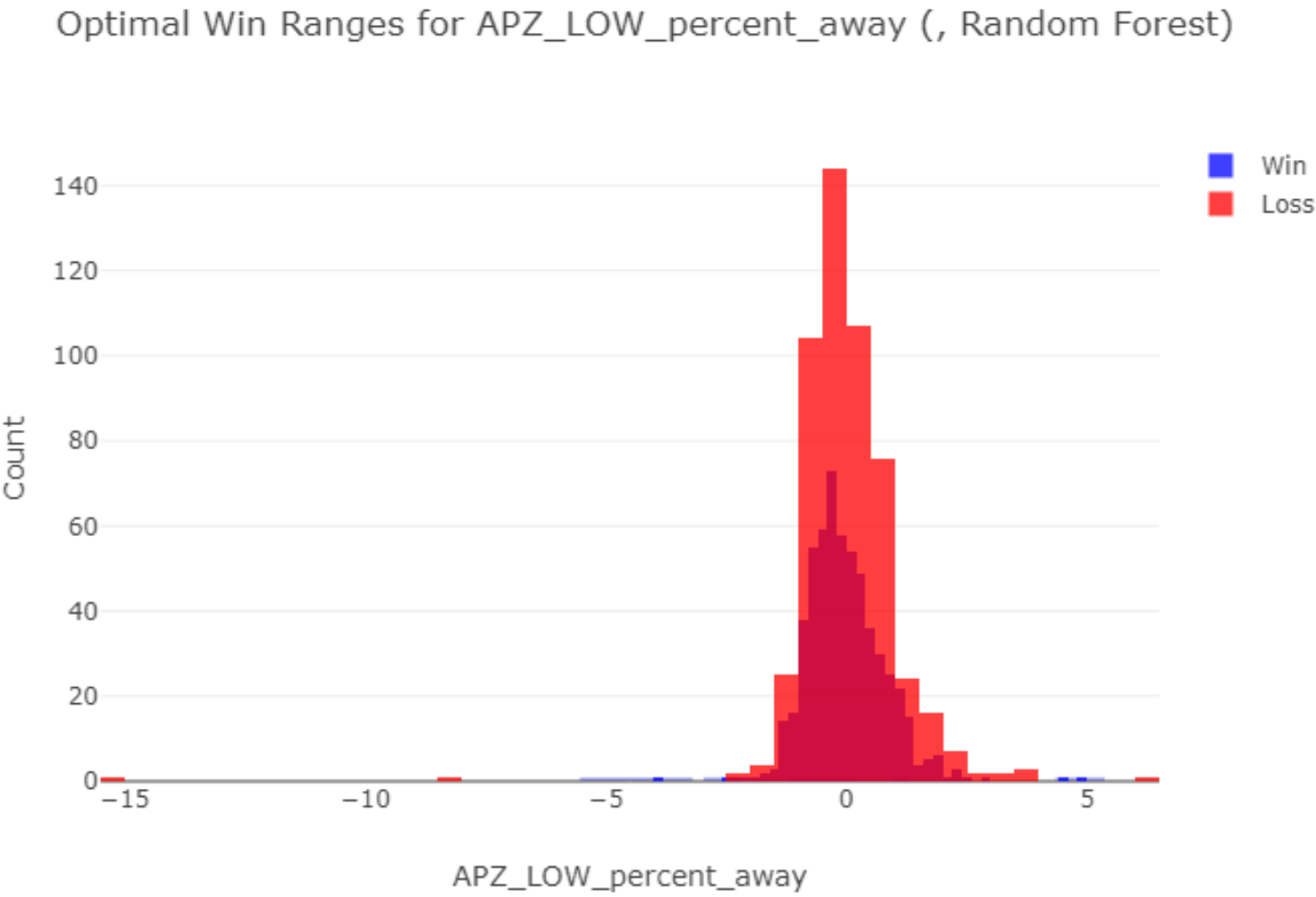Optimal Win Ranges for 62_ZLEMA_percent_away (, Random Forest)

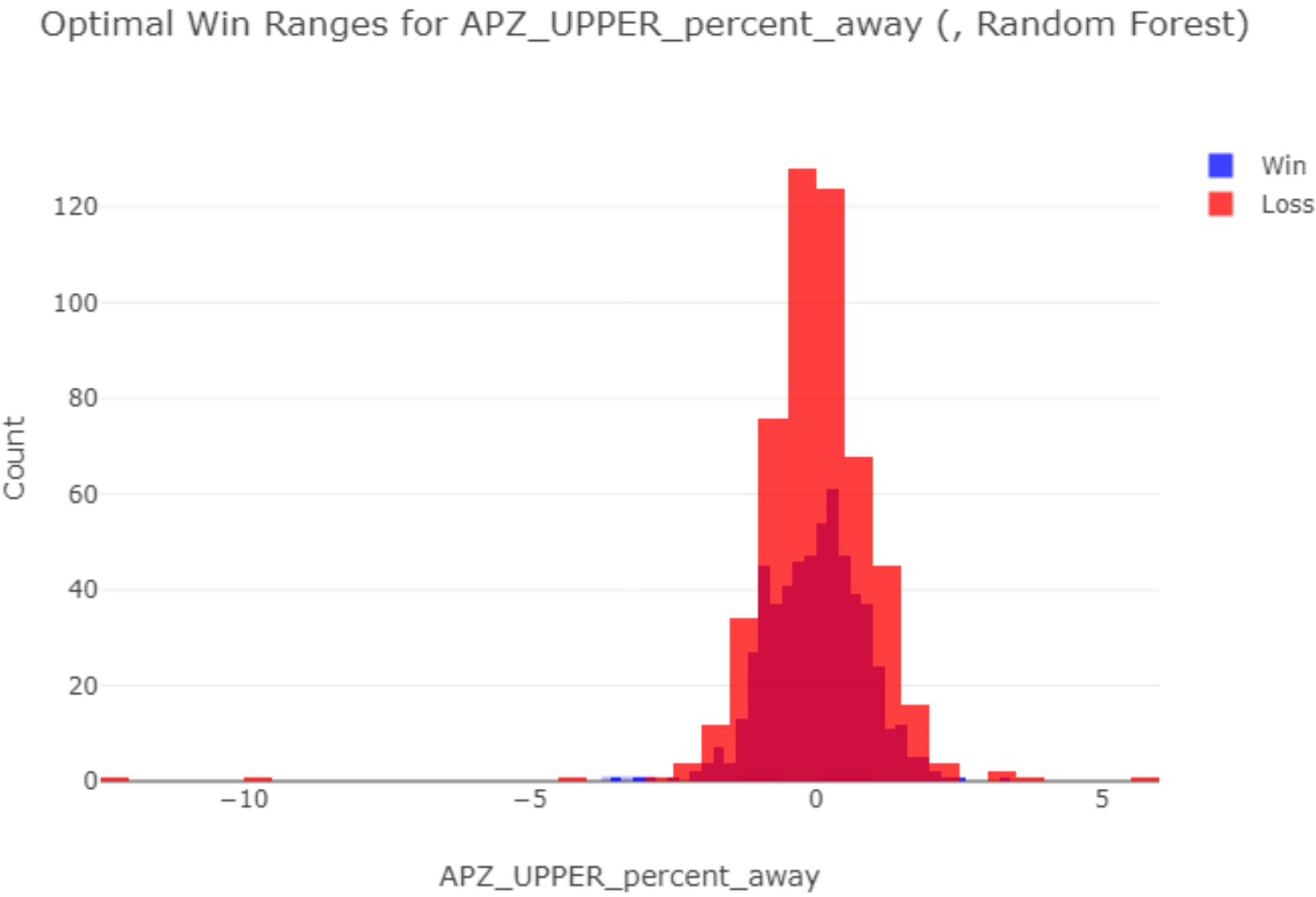Optimal Win Ranges for VWAP_L2_percent_away (, Random Forest)
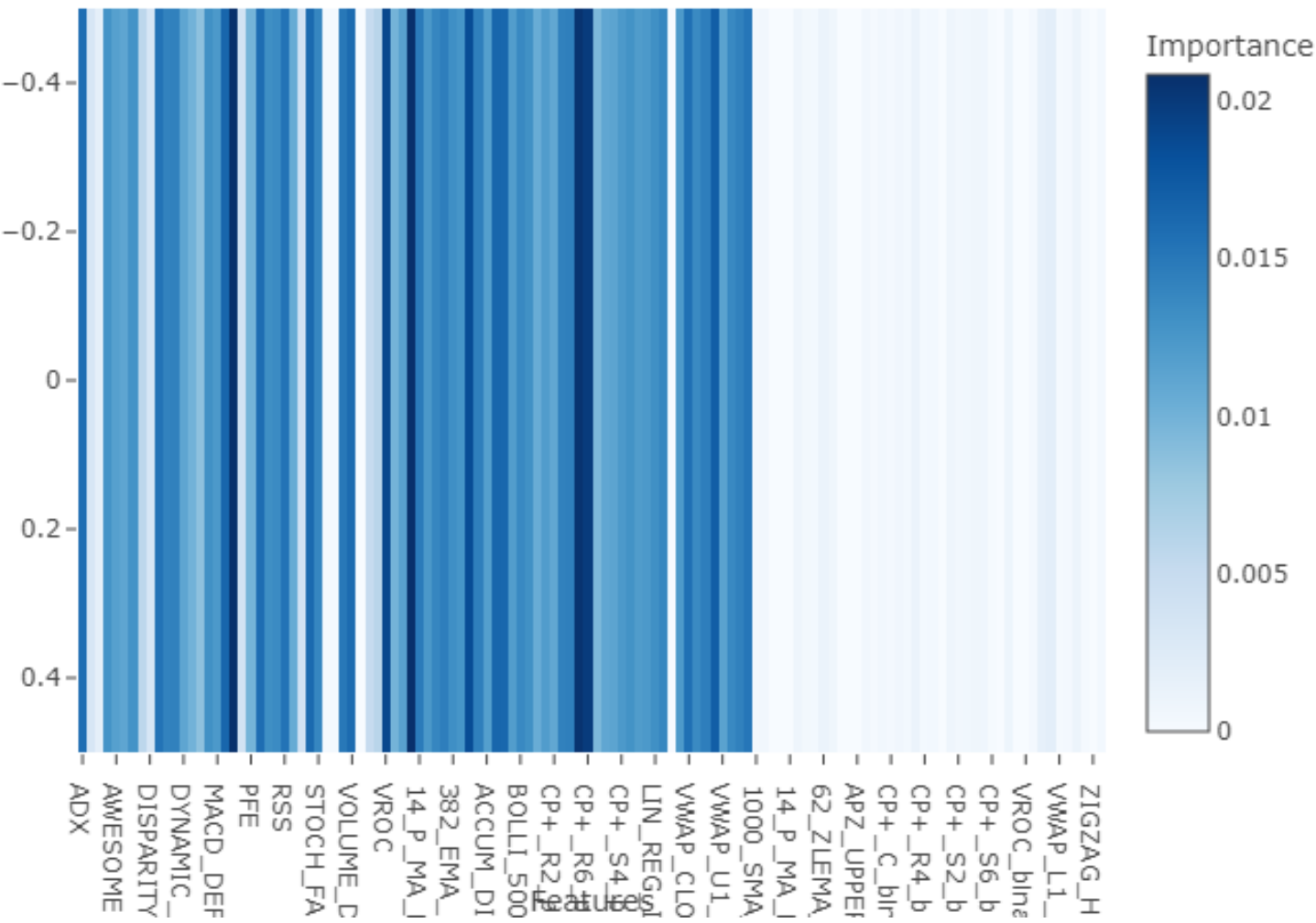
Optimal Win Ranges for MACD_DIFF (, Random Forest)

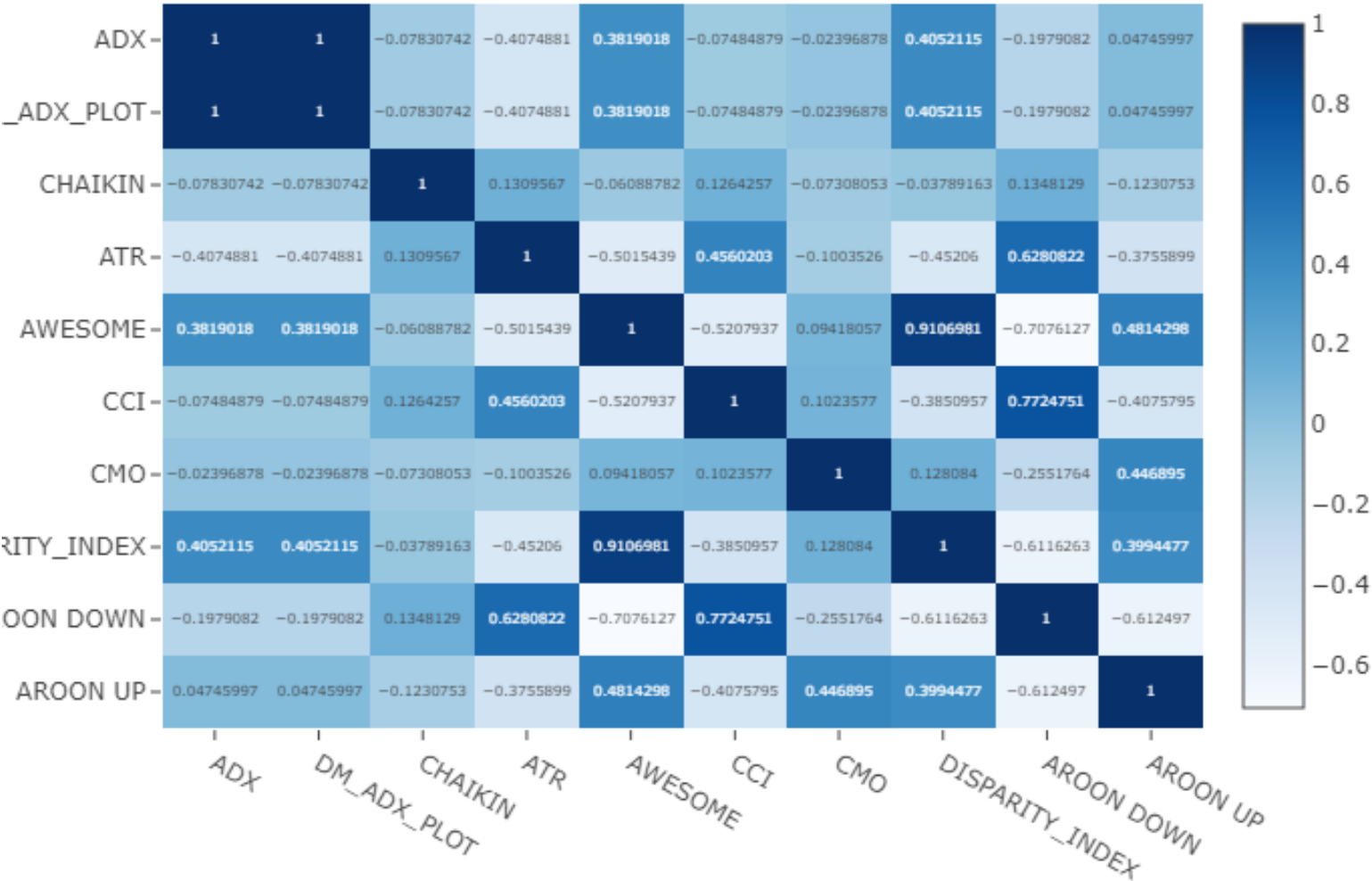Optimal Win Ranges for APZ_LOW_percent_away (, Random Forest)

Optimal Win Ranges for APZ_UPPER_percent_away (, Random Forest)
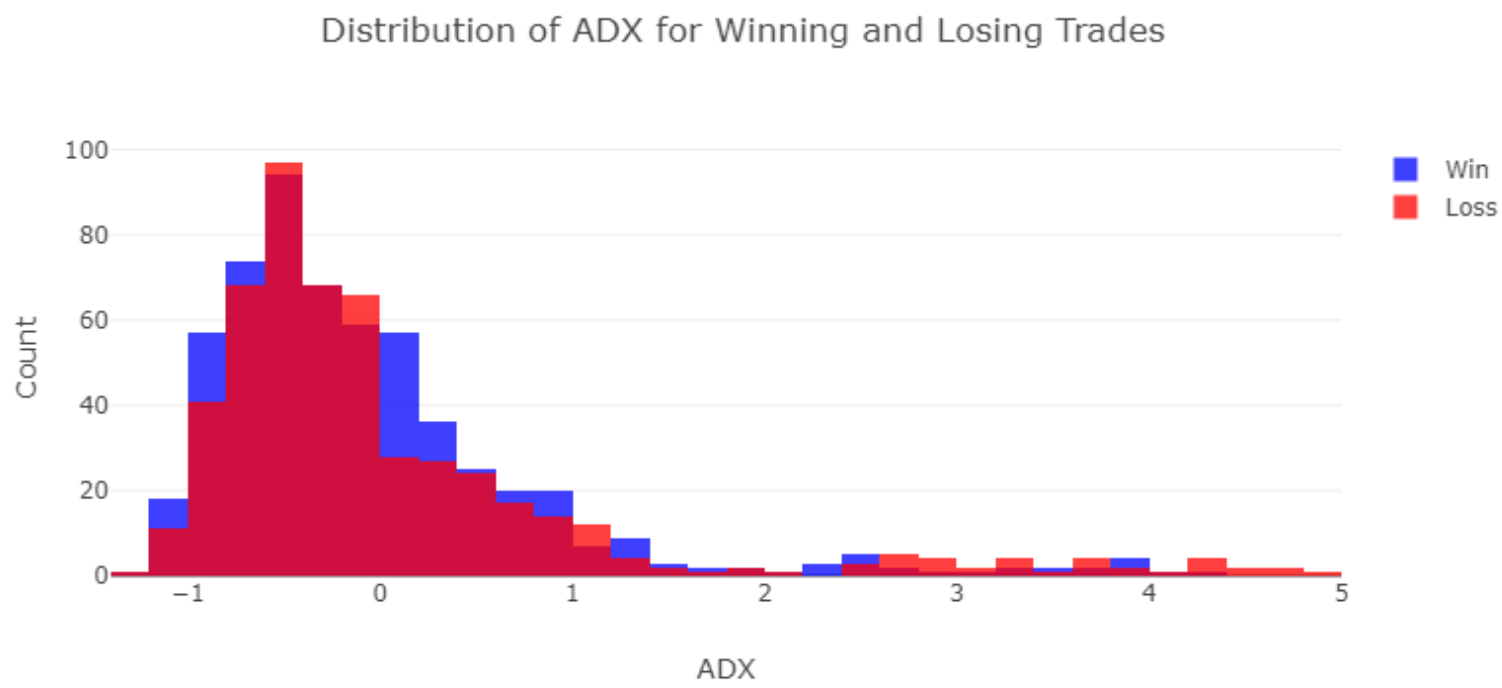
Feature Importance Heatmap

Correlation Matrix of Top Indicators

	ADX	DM_ADX_PLOT	CHAIKIN	ATR	AWESOME	CCI	CMO	DISPARITY_INDEX	AROON DOWN	AROON UP
ADX	1	1	−0.07830742	−0.4074881	0.3819018	−0.07484879	−0.02396878	0.4052115	−0.1979082	0.04745997
_ADX_PLOT	1	1	−0.07830742	−0.4074881	0.3819018	−0.07484879	−0.02396878	0.4052115	−0.1979082	0.04745997
CHAIKIN	−0.07830742	−0.07830742	1	0.1309567	−0.06088782	0.1264257	−0.07308053	−0.03789163	0.1348129	−0.1230753
ATR	−0.4074881	−0.4074881	0.1309567	1	−0.5015439	0.4560203	−0.1003526	−0.45206	0.6280822	−0.3755899
AWESOME	0.3819018	0.3819018	−0.06088782	−0.5015439	1	−0.5207937	0.09418057	0.9106981	−0.7076127	0.4814298
CCI	−0.07484879	−0.07484879	0.1264257	0.4560203	−0.5207937	1	0.1023577	−0.3850957	0.7724751	−0.4075795
CMO	−0.02396878	−0.02396878	−0.07308053	−0.1003526	0.09418057	0.1023577	1	0.128084	−0.2551764	0.446895
RITY_INDEX	0.4052115	0.4052115	−0.03789163	−0.45206	0.9106981	−0.3850957	0.128084	1	−0.6116263	0.3994477
OON DOWN	−0.1979082	−0.1979082	0.1348129	0.6280822	−0.7076127	0.7724751	−0.2551764	−0.6116263	1	−0.612497
AROON UP	0.04745997	0.04745997	−0.1230753	−0.3755899	0.4814298	−0.4075795	0.446895	0.3994477	−0.612497	1

Distribution of ADX for Winning and Losing Trades

Distribution of ADX for Winning and Losing Trades

KDE Plot with Optimal Win Ranges for ADX

KDE Plot with Optimal Win Ranges for ADX
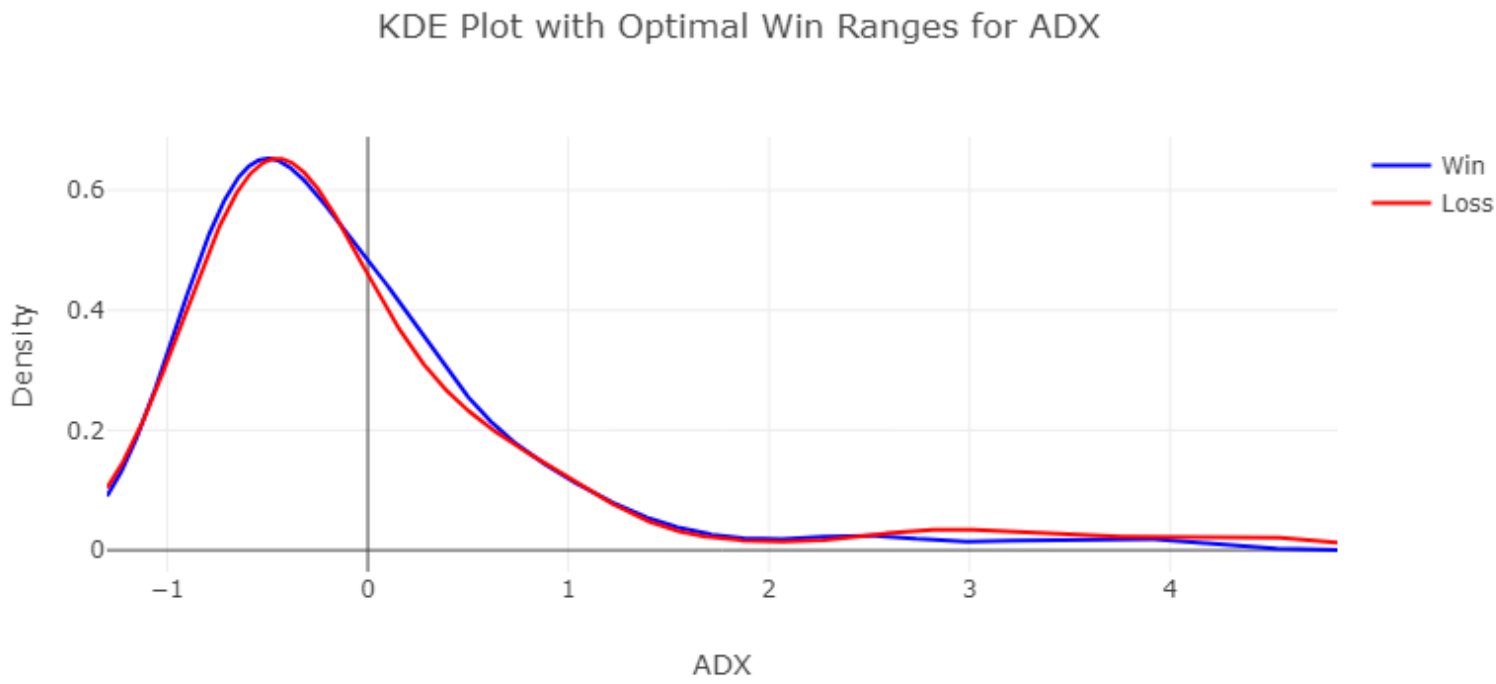
Mean Indicator Values for Losses