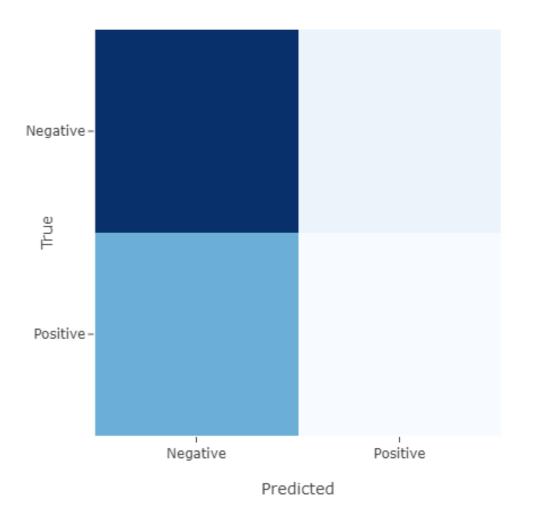
Classification Report precision recall f1-score support 0.66 0.29 0.92 0.07 0.77 0.11 59 30 0 1 accuracy macro avg weighted avg 89 0.63 0.44 0.49 0.63 89 0.47 0.53 0.54 89 Accuracy Accuracy: 0.6292134831460674

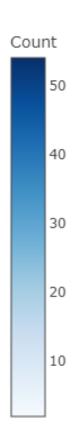
Optimal Win Ranges Summary feature optimal_win_range_start optimal_win_range_end					
0	feature optimal_ 62_ZLEMA_percent_awa	_win_range_start_op av -8.7866	50		
1	62_ZLEMA_percent_awa	aý -0.5477			
2	62_ZLEMA_percent_awa				
3	ÄDX	-0.476944	1.647026		
4	ADX	1.982632	2.736595		
5	CHAIKIN	-2.835997	0.238950		
2 3 4 5 6 7 8 9	CHAIKIN				
7	CHAIKIN	5.284809 -0.476944	5.333877		
8	DM_ADX_PLOT DM_ADX_PLOT	-0.476944	1.647026		
	DM_ADX_PLOT	1.982632	2.736595		
10	VOLUME	-1.293947			
11	VOLUME	0.925387	1.650938		
12	VOLUME	1.846044	2.358198		
13	RIND	-0.704866	0.693373		
14	RSI_DEFAULT				
15	RSI_DEFAULT	1.478260			
16	VROC	-0.838718	-0.049433		
17	VROC	3.495545	4.325655		
18	VROC	5.686491	5.958658		
19	1000_SMA_percent_aw				
20	1000_SMA_percent_aw				
21	1000_SMA_percent_aw	ay 3.5845	581 4.537478	4.440005	
22 14_IVI	A_ENVELOPES_UPPER_	percent_away	-2.598799	-1.112025	
22 14_MA_ENVELOPES_UPPER_percent_away -2.598799 23 14_MA_ENVELOPES_UPPER_percent_away -0.485368 24 14_MA_ENVELOPES_UPPER_percent_away 1.511332					
∠4 14_IVI	A_ENVELOPES_UPPER_	percent_away	1.511332	3.538751	

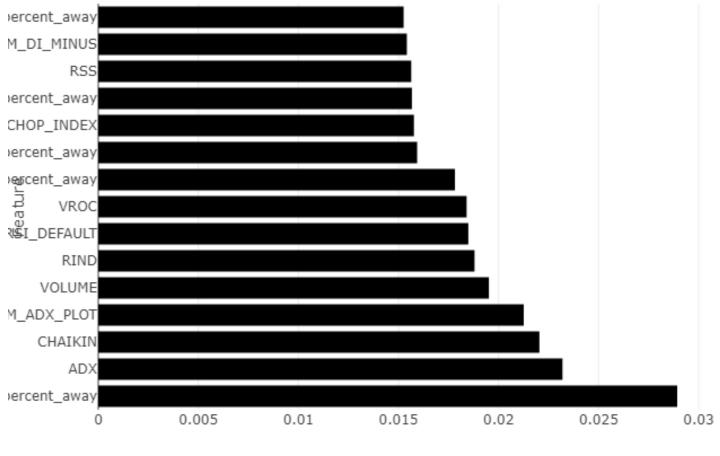
Loss Mitigation Analysis	Loss Mitigation Analysis count mean std min 25% 50% 75% max				
ADX	ount mean std min 25% 50% 75% max 161.0 -0.086724 1.033868e+00 -1.856146 -0.816921 -0.279124 0.611044 2.684127				
AROON DOWN	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.00				
AROON UP	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.000				
ATR	161.0 0.089757 9.908347e-01 -1.569222 -0.625525 -0.094696 0.731039 3.473657				
AWESOME	161.0 -0.039341 9.819450e-01 -1.229055 -1.014987 -0.558666 0.982758 1.162				
	161.0 -0.042472 1.017479e+00 -1.710272 -1.018385 -0.132852 0.930918 1.539593				
CHAIKIN	161.0 0.152176 1.065306e+00 -2.835997 -0.381632 -0.038888 0.535399 4.8915				
CMO	161.0 -0.033158 9.753289e-01 -2.427354 -0.717361 -0.041638 0.634085 2.821059				
DISPARITY_INDEX	161.0 0.062717 7.841291e-01 -2.137917 -0.022680 -0.022680 -0.022680 2				
DM_ADX_PLOT	161.0 -0.086724 1.033868e+00 -1.856146 -0.816921 -0.279124 0.611044 2.				
DM_DI_MINUS DM_DI_PLUS	161.0 0.016292 9.882151e-01 -2.355034 -0.847005 0.258633 0.852820 1.56 161.0 -0.036719 9.123487e-01 -2.164098 -0.778099 0.060892 0.740956 1.40				
DYNAMIC_MOMENTUM					
FISHER_TRANSFORM	161.0 -0.034812 9.922686e-01 -1.176961 -1.165929 -0.299934 1.109376				
LIN_REG_SLOPE	161.0 -0.063989 1.012748e+00 -1.830464 -1.000933 -0.159880 0.888555 1				
MACD_AVG	161.0 -0.037604 9.413144e-01 -1.324624 -0.938041 -0.531749 0.891787 1.24				
MACD_DEFAULT	161.0 -0.042298 9.567781e-01 -1.278772 -0.975890 -0.557781 0.926998 1.				
MACD_DIFF	161.0 -0.013007 7.318337e-01 -1.361020 -0.571660 -0.030803 0.539290 1.445				
MFI	161.0 0.090901 9.776886e-01 -1.900620 -0.671071 0.160100 0.961028 2.040925				
MOMENTUM	161.0 -0.029736 9.765790e-01 -2.518763 -0.537387 -0.042043 0.453301 2.93				
PFE	161.0 -0.036801 9.785148e-01 -1.279243 -1.097408 -0.272154 1.070633 1.210506				
RIND	161.0 0.024435 1.066203e+00 -1.480718 -0.967343 -0.046757 0.863972 2.777942				
RSI_AVERAGE	161.0 -0.019465 9.643881e-01 -1.611402 -0.846854 -0.350340 0.833380 1.5				
RSI_DEFAULT RSS	161.0 0.045158 8.068842e-01 -1.696035 -0.501174 -0.016771 0.713870 1.61 161.0 -0.052284 9.967916e-01 -1.288471 -1.123238 -0.145975 1.021024 1.234005				
	161.0 -0.036774 9.868984e-01 -1.346030 -1.008510 -0.618802 0.959318 1.300526				
R SQUARED	161.0 0.079282 1.223987e+00 -0.235038 -0.235038 -0.235038 -0.235038 6.4				
STOCH FAST D	161.0 -0.060309 9.996305e-01 -1.187456 -1.017111 -0.856491 0.951241 1.				
STOCH_FAST_K	161.0 0.047957 1.016528e+00 -1.801193 -0.996574 0.103517 1.034170 2.				
TRIX_DEFAULT	161.0 -0.004517 9.583570e-01 -1.377299 -0.037796 -0.037796 1.301707 1.3				
TRIX_SIGNAL	161.0 0.023098 9.486039e-01 -1.406677 -0.044583 -0.044583 1.317511 1.31				
VOLUME	161.0 0.087517 1.092542e+00 -1.293947 -0.671360 -0.131785 0.333772 4.561				
VOLUME_DOWN	161.0 -0.007181 9.923741e-01 -0.694961 -0.694961 -0.694961 0.478686 4				
VOLUME_UP VORTEX_MINUS	161.0 0.097487 1.161919e+00 -0.655680 -0.655680 -0.449074 0.563224 5.39 161.0 0.056227 9.905588e-01 -1.356432 -0.994989 0.270063 1.083310				
VORTEX_MINUS VORTEX_PLUS	161.0 -0.047229 9.841298e-01 -1.242821 -1.151938 -0.243107 1.029256 1.4				
VROC	161.0 0.111302 1.098421e+00 -0.830880 -0.545617 -0.256553 0.348074 5.32693				
WILLIAMS_%R	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.00				
strategy_amount	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000				
account_amount	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.00				
DIV_BULL	161.0 0.060427 1.003068e+00 -0.971073 -0.971073 1.029789 1.029789 1.0297				
DIV_BEAR	161.0 -0.060427 1.003068e+00 -1.029789 -1.029789 -1.029789 0.971073 0.971				
CHOP_INDEX	161.0 0.065839 9.944245e-01 -1.380297 -0.664986 -0.384246 0.717563 2.53				
AROON_UP	161.0 -0.032107 9.884962e-01 -1.223579 -1.223579 0.163214 0.933510 0.93				
AROON_DOWN ACCUM_DIST	161.0 0.062059 1.002952e+00 -1.159877 -1.159877 0.993562 0.993562 0 161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.000000				
OBV	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.000000				
WILLIAMSR	161.0 0.047957 1.016528e+00 -1.801193 -0.996574 0.103517 1.034170 2.50				
CHANDE_CMO	161.0 -0.033158 9.753289e-01 -2.427354 -0.717361 -0.041638 0.634085 2.8				
	161.0 -0.042233 9.612796e-01 -1.273517 -1.042728 -0.231375 0.967703 1.188235				
1000_SMA_percent_away					
144_SMA_percent_away	161.0 -0.007900 8.741756e-01 -1.824832 -0.752271 -0.264145 0.761354				
14_P_MA_ENVELOPES_	_LOWER_percent_away 161.0 0.000000 0.000000e+00 0.000000 0.000000 0.0000				
14_P_IVIA_ENVELUPES_	_MID_percent_away				
236_EMA_envelopes_	UPPER_percent_away 161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 161.0 -0.014981 9.109384e-01 -2.278749 -0.642888 -0.107425 0.728828				
382_EMA_percent_away	161.0 -0.022606 9.399239e-01 -2.535754 -0.650709 0.035614 0.624059				
618_EMA_percent_away					
62_ZLEMA_percent_away	y 161.0 0.007904 8.283073e-01 -1.842191 -0.762863 0.200388 0.742982				
8_ZLEMA_percent_away	161.0 0.049304 9.555986e-01 -1.970770 -0.887448 0.737721 0.940378				
ACCUM_DIST_percent_a					
APZ_LOW_percent_away	/ 161.0 0.054962 9.560470e-01 -2.011243 -0.889745 0.744222 0.958067				
APZ_UPPER_percent_av	vay 161.0 0.038502 9.498152e-01 -1.998469 -0.900980 0.670735 0.966535				

Loca Mitigation Analysis	
Loss Mitigation Analysis	away 161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.0
BOLLI_500_P_MID_percent_awa	
BOLLI_500_P_UPPER_percent_a	
CP+_C_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0
	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000
	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000
CP+_R3_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000
CP+_R4_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000
CP+_R5_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000
CP+_R6_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000
CP+_S1_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000
CP+_S2_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000
CP+_S3_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000
	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.0000000
CD - S5 percent away	161.0 0.000000 0.0000000000 0.000000 0.000000
	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000
	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000
LIN_REG_percent_away	161.0 0.051824 9.652111e-01 -1.811486 -0.908261 0.643023 0.979421
LIN_REG_INTERCEPT_percent_	
	161.0 0.102744 1.264883e+00 0.003057 0.003057 0.003057 0.003057 1
VWAP percent away	161.0 -0.004920 9.979144e-01 -3.343468 -0.425954 0.083211 0.534928 2
VWAP_CLOUD_HIGH_percent_a	
VWAP_CLOUD_LOW_percent_a	
	161.0 0.033598 1.007244e+00 -2.463562 -0.550016 -0.036018 0.560001
VWAP_L2_percent_away	
VWAP_U1_percent_away	161.0 -0.033751 9.992960e-01 -3.827084 -0.460838 0.179575 0.614244
VWAP_U2_percent_away	161.0 -0.051815 1.004183e+00 -4.045844 -0.473131 0.310372 0.638305
ZIGZAG_HIGH_percent_away	
ZIGZAG_LOW_percent_away	161.0 -0.063405 5.931957e-01 -0.822025 -0.336612 -0.299673 0.03953
VOLUME LIP percent away	161.0 0.083313 1.660656e+00 -0.047565 -0.047565 -0.047565 -0.047565
VOLUME_UP_percent_away	
CPR6_percent_away	161.0 -0.000669 1.020631e+00 -2.499174 -0.674171 0.014235 0.810805
CPS6_percent_away	161.0 -0.077161 9.937800e-01 -1.455098 -0.881476 -0.319022 0.445941 2
CHAIKIN_percent_away	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000
BOLLI_500_UPPER_percent_awa	ay 161.0 -0.010971 9.792190e-01 -3.612127 -0.522336 0.158419 0.686
CPS3_percent_away	161.0 -0.080173 1.012653e+00 -2.019182 -0.910201 -0.061938 0.557939
	yay 161.0 -0.027122 9.547062e-01 -1.930522 -0.745580 -0.042059 0.49
	percent_away 161.0 0.038318 9.140882e-01 -2.454637 -0.863963 0.532139
	percent_away 161.0 0.038327 9.140363e-01 -2.454502 -0.864895 0.531873
14_WA_ENVELOPES_LOVVER_L	ont ourse
14_MA_ENVELOPES_MID_perce	ent_away 161.0 0.038305 9.140535e-01 -2.454700 -0.863995 0.532908 0
	161.0 -0.078610 1.015381e+00 -2.040837 -0.905768 -0.048792 0.558686
VOLUME_DOWN_percent_away	161.0 0.083313 1.660656e+00 -0.047565 -0.047565 -0.047565 -0.04
CPS1_percent_away	161.0 -0.076540 1.018175e+00 -2.135086 -0.833336 -0.016894 0.557401
CP R5 percent awav	161.0 -0.076540 1.018175e+00 -2.135086 -0.833336 -0.016894 0.557401 161.0 -0.024394 1.028781e+00 -2.759710 -0.761173 0.167312 0.769370
CP R4 percent away	161.0 -0.048407 1.031246e+00 -2.775388 -0.755696 0.153103 0.661412
	161.0 -0.070768 1.023575e+00 -2.393238 -0.664270 0.041792 0.539985
CP_C_percent_away	161.0 -0.073930 1.020944e+00 -2.269003 -0.752572 -0.009869 0.552733
CP_S5_percent_away	161.0 -0.081342 9.980795e-01 -1.704626 -0.812217 -0.251391 0.550570 2
BOLLI_500_MID_percent_away	
CPR3_percent_away	161.0 -0.062898 1.027968e+00 -2.599601 -0.540786 0.157130 0.599208
VOLUME_percent_away	161.0 0.102016 1.659005e+00 -0.058243 -0.058243 -0.058243 -0.058243
CP S4 percent away	161.0 -0.082394 1.005521e+00 -1.915401 -0.806777 -0.171469 0.552755
CP R2 percent away	161.0 -0.067072 1.025950e+00 -2.504379 -0.569731 0.113497 0.541409
1000 SMA binary	161.0 -0.067072 1.025950e+00 -2.504379 -0.569731 0.113497 0.541409 161.0 -0.099942 9.987799e-01 -1.006795 -1.006795 -1.006795 0.993251 0.9
1/1/ SMA hipany	61.0 -0.060427 1.003068e+00 -1.029789 -1.029789 -1.029789 0.971073 0.9
	R_binary 161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0
	nary 161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.00
	R_binary
	61.0 -0.046863 1.002761e+00 -1.015928 -1.015928 -1.015928 0.984322 0.9
	61.0 -0.054839 1.004969e+00 -1.062924 -1.062924 0.940801 0.940801 0.9
	61.0 -0.046930 1.005102e+00 -1.067753 -1.067753 0.936546 0.936546 0.9
62 7I FMA hinary	161.0 0.051383 1.002843e+00 -0.979886 -0.979886 1.020527 1.020527 1.0
8_ZLEMA_binary 1	61.0 0.060427 1.003068e+00 -0.971073 -0.971073 1.029789 1.029789 1.0
ACCUM_DIST_binary	161.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 (
APZ_LOW_binary	161.0 0.006838 9.609567e-01 -12.110601 0.082572 0.082572 0.082572 0.0

```
Loss Mitigation Analysis
APZ_UPPER_binary
BOLLI_500_P_LOWER_binary
BOLLI_500_P_MID_binary
BOLLI_500_P_MID_binary
BOLLI_500_P_UPPER_binary
BOLLI_500_P_UPPER_binary
BOLLI_500_P_MID_binary
BOLLI_500_P_MID_binary
BOLLI_500_P_UPPER_binary
BOLLI_500_P_
              LIN_REG_binary 161.0 0.005904 1.002946e+00 -0.075470 -0.975470 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.025147 1.0
             CP__R5_binary
BOLLI_500_LOWER_binary
                                                                                                                                                                                                                                                                                                                                                                               161.0 -0.048119 1.021979e+00 -1.502449 -1.502449 0.665580 0.66558
          BOLLI_500_LOWER_binary
CP__S5_binary
CP_S5_binary
CP_S2_binary
CP_R3_binary
CP_R3_binary
CP_R3_binary
CP_R3_binary
CP_S6_binary
CP_S6_binary
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CP_R3_binary
CP_R4_binary
CP_R5_binary
CP_R5_b
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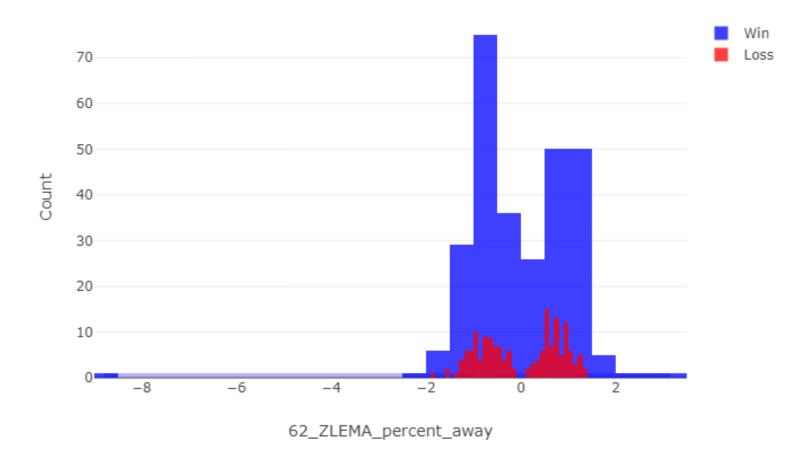




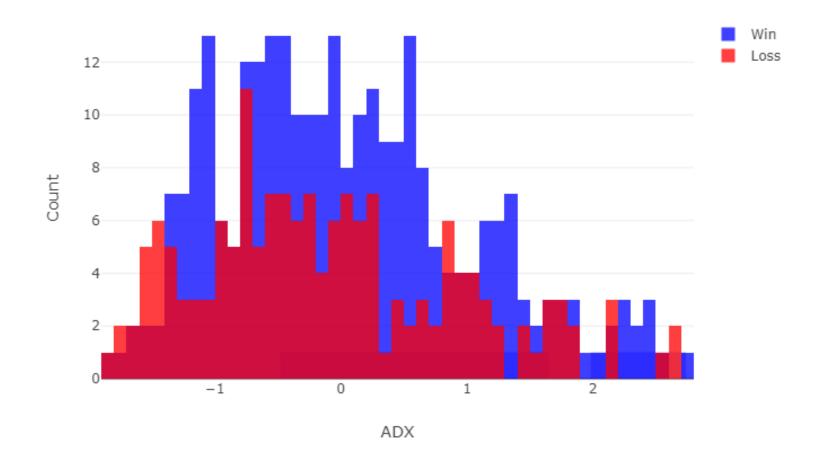


Importance

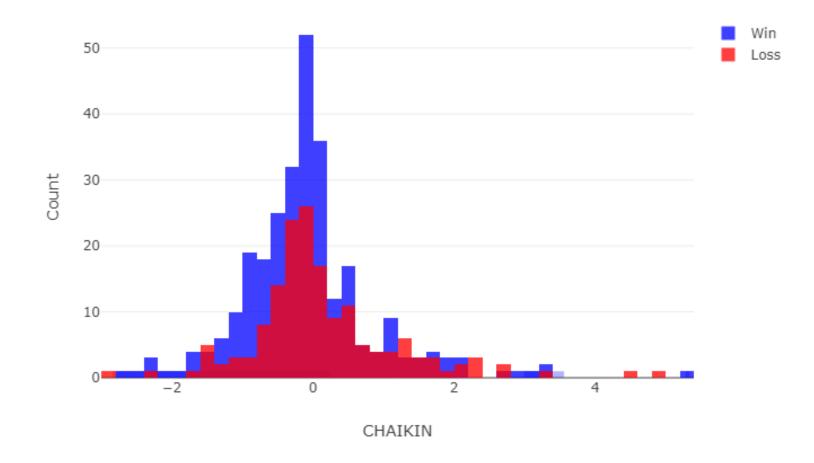
Optimal Win Ranges for 62_ZLEMA_percent_away (, Random Forest)



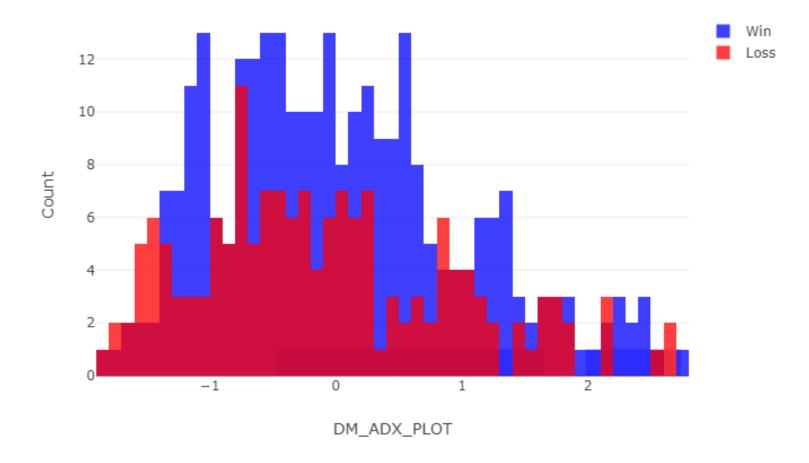
Optimal Win Ranges for ADX (, Random Forest)



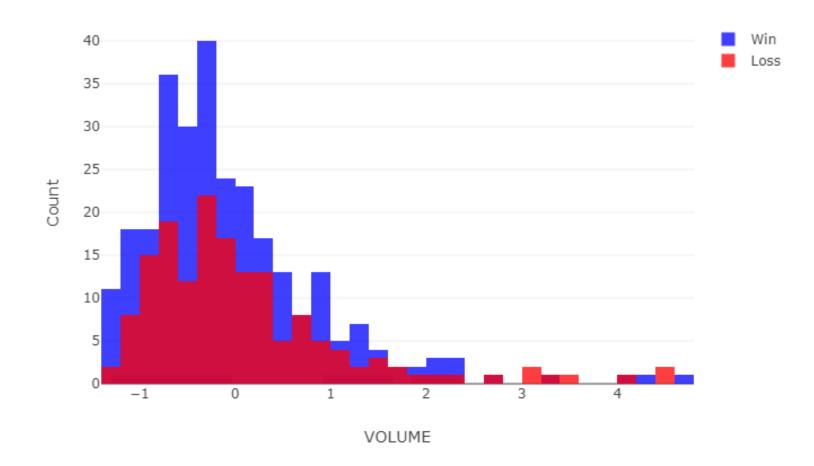
Optimal Win Ranges for CHAIKIN (, Random Forest)



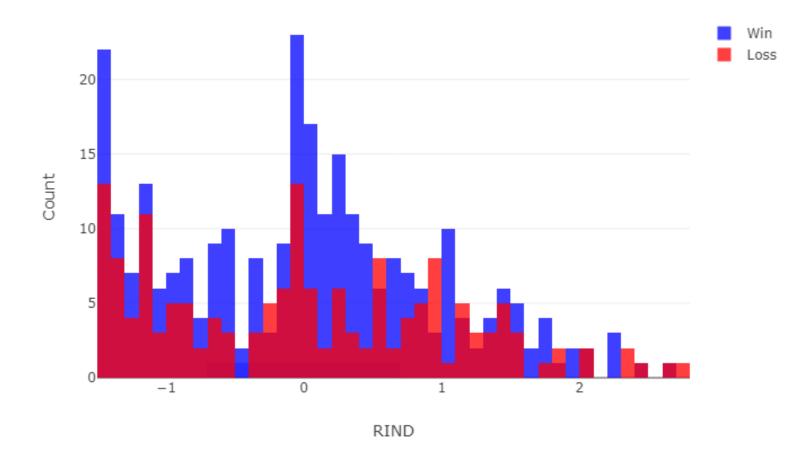
Optimal Win Ranges for DM_ADX_PLOT (, Random Forest)



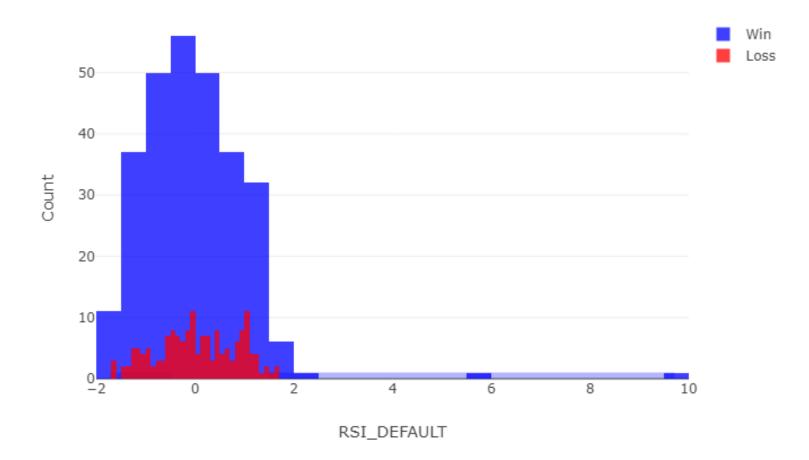
Optimal Win Ranges for VOLUME (, Random Forest)



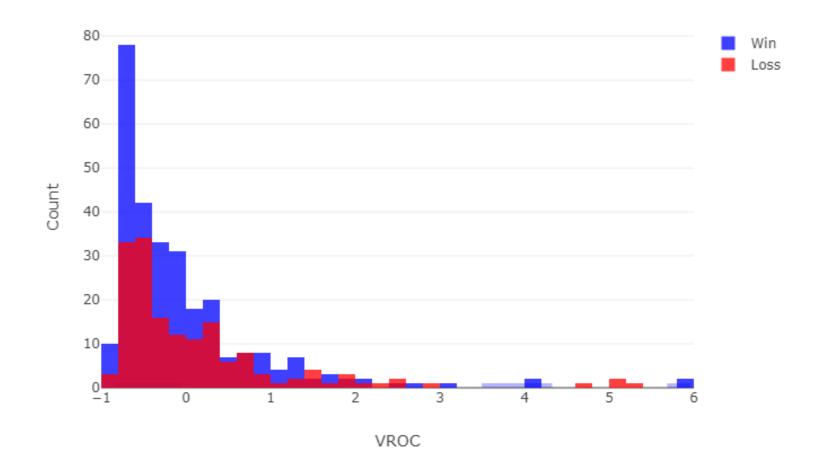
Optimal Win Ranges for RIND (, Random Forest)



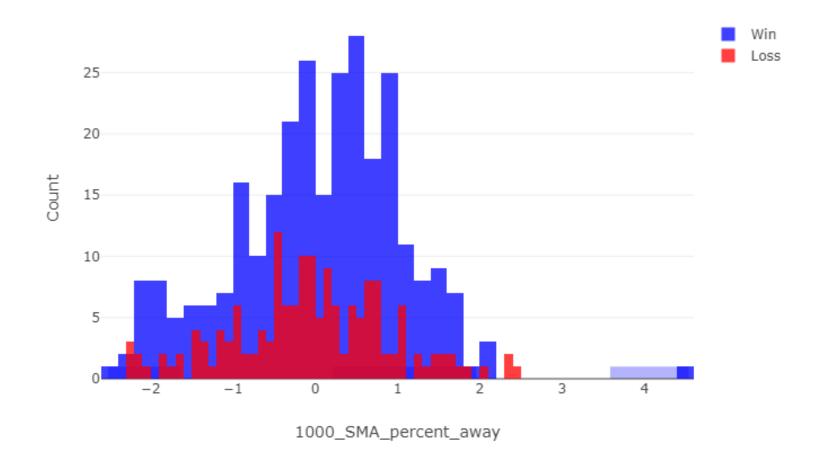
Optimal Win Ranges for RSI_DEFAULT (, Random Forest)



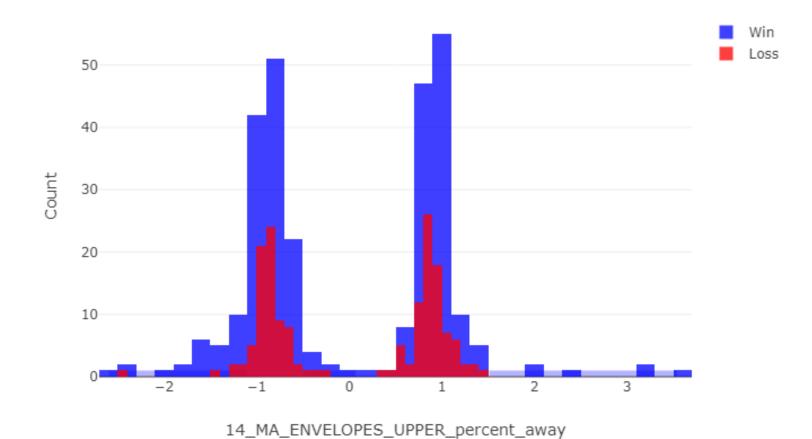
Optimal Win Ranges for VROC (, Random Forest)

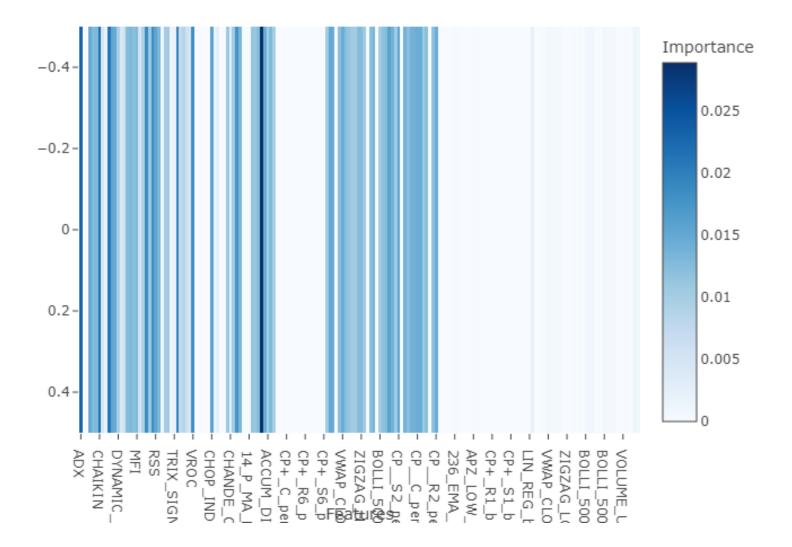


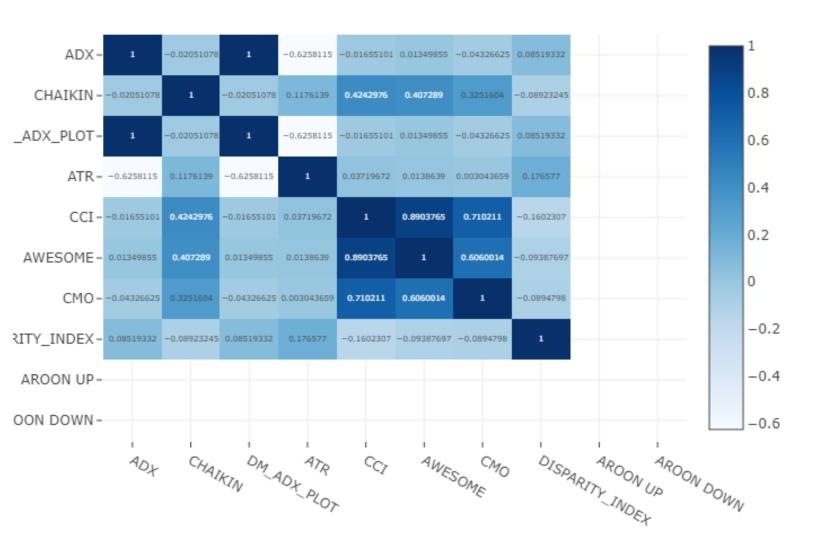
Optimal Win Ranges for 1000_SMA_percent_away (, Random Forest)



otimal Win Ranges for 14_MA_ENVELOPES_UPPER_percent_away (, Random Fores



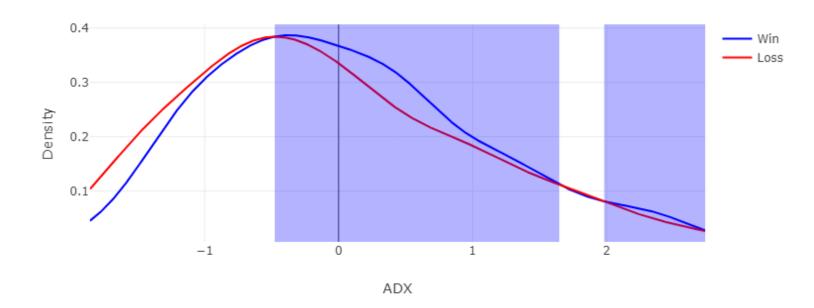




Distribution of ADX for Winning and Losing Trades



KDE Plot with Optimal Win Ranges for ADX



Mean Indicator Values for Losses

