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

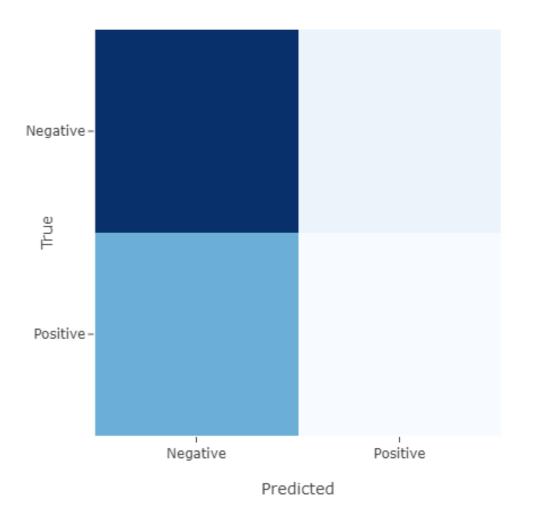
| Optimal Win Ranges Summary for Long Trades | | | | |
|--|--------------------------|-------------------------|-----------------------|----------|
| • | feature trade_type of | optimal_win_range_start | t_optimal_win_range_e | nd |
| 0 | 62_ZLEMA_percent_away | LE 0.3124 | 1.078965 | |
| 1 | ADX LE | -1.856146 | -0.550502 | |
| 2 | CHAIKIN LE | -0.504448 | 2.233416 | |
| 3 | DM ADX PLOT | LE -1.856146 | -0.550502 | |
| 4 | VOLUME LE | -1.293947 | -0.982996 | |
| 5 | VOLUME LE | 0.236418 | 0.626631 | |
| 6 | VOLUME LE | 1.437541 | 4.797026 | |
| 7 | RIND LE | -1.480718 | -0.983992 | |
| 8 | RIND LE | -0.326708 | 0.307998 | |
| 9 | RSI DEFAULT L | E -0.448612 | -0.071381 | |
| 10 | RSI DEFAULT L | _E 0.453061 | 1.351668 | |
| 11 | VROC LE | 0.133962 | 1.032273 | |
| 12 | VROC LE | 1.629096 | 3.727207 | |
| 13 | VROC LE | 4.422475 | 5.326939 | |
| 14 | 1000_SMA_percent_away | LE -1.533 | 229 0.221328 | |
| 15 14 N | /IA_ENVELOPES_UPPER_pero | cent_away LE | 0.156019 | 0.332407 |
| | MA_ENVELOPES_UPPER_per | | 0.728300 | 1.030120 |
| _ | = - | • | | |

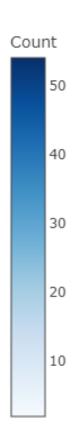
| Optimal Win Ran | ges Summary for Sl | nort Trades | 3 | (C | . 1 |
|------------------|---|-------------|-----------|-----------------------|-----------|
| 0 00 7 | | | | t optimal_win_range_e | |
| 0 62_Zl | LEMA_percent_awa | | | | |
| 1 | ADX SE | | 1.813218 | -1.390044 | |
| 2 3 | ADX SE | | 0.458162 | -0.156538 | |
| 3 | ADX SE | | 0.761839 | 2.031359 | |
| 4 | ADX SE | | 2.616599 | 2.684127 | |
| 4 5 6 7 | CHAIKIN S | | -2.835997 | -1.273989 | |
| 6 | CHAIKIN S | | 0.443402 | 3.133981 | |
| 7 | CHAIKIN S | | 3.461103 | | |
| 8 9 | DM_ADX_PLOT | SE | -1.813218 | | |
| 9 | DM_ADX_PLOT | SE | -0.458162 | -0.156538 | |
| 10 | $\overline{DM}_{A}\overline{DX}_{P}\overline{PLOT}$ | | 0.761839 | 2.031359 | |
| 11 | DM_ADX_PLOT | SE | 2.616599 | 2.684127 | |
| 12 | | SE | -0.359423 | 1.402662 | |
| 13 | VOLUME | SE | 2.742522 | 3.969788 | |
| 14 | RIND SE | | 0.563846 | 2.777942 | |
| 15 | RSI_DEFAULT | SE | -0.519131 | 1.443094 | |
| 16 | VROC SI | = | -0.069845 | 2.508939 | |
| 17 | VROC SI | = | 4.114725 | 5.495974 | |
| 18 1000 | _SMA_percent_awa | ay SE | -1.607 | '683 -1.287814 | |
| | _SMA_percent_awa | | -0.949 | 0.250013 | 1 |
| 20 1000 | _SMA_percent_awa | aý SE | | 486 3.608630 | |
| 21 14 MA ENV | ĒLOPĒS_UPPĒR_Ķ | ercent aw | | -2.559908 | -2.393736 |
| 22 14 MA ENV | ELOPES_UPPER_r | percent aw | ∕ay SE | -1.053758 | -0.675453 |
| | | | • | | |

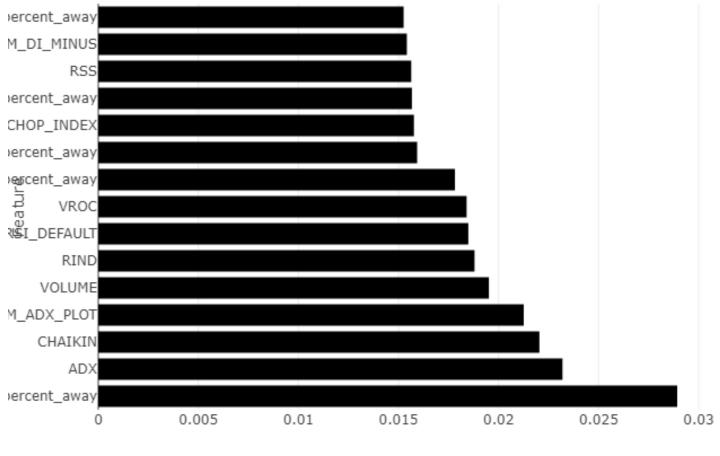
| Optimal Win Ranges Summary for Both L | ong and Short Trade | S _. | |
|---------------------------------------|----------------------|-----------------------|-----------|
| | otimal_win_range_sta | rt optimal_win_range_ | _end |
| 0 62_ZLEMA_percent_away | -0.9537 | '55 -0.559722 | |
| 1 62_ZLEMA_percent_away | 0.1328 | 1.159694 | |
| 2 ADX | -1.856146 | -0.481542 | |
| 3 ADX | 1.651623 | 1.978034 | |
| 4 CHAIKIN | 0.247128 | 2.986776 | |
| 5 CHAIKIN | 3.567418 | 5.276630 | |
| 6 DM_ADX_PLOT | -1.856146 | -0.481542 | |
| 7 DM ADX PLOT | 1.651623 | 1.978034 | |
| 8 VOLUME | -0.031853 | 0.919290 | |
| 9 VOLUME | 1.657035 | 1.839947 | |
| 10 VOLUME | 2.364295 | 4.797026 | |
| 11 RIND | -1.480718 | -0.709129 | |
| 12 RIND | 0.697636 | 2.777942 | |
| 13 RSI_DEFAULT | -0.488607 | 1.466825 | |
| 14 VROC | -0.042629 | 3.488741 | |
| 15 VROC | 4.332459 | 5.679687 | |
| 16 1000_SMA_percent_away | -1.6316 | 648 0.210620 | |
| 17 1000_SMA_percent_away | 1.961 | | |
| 18 14_MA_ENVELOPES_UPPER_perce | | -1.105881 | -0.491512 |
| 19 14_MA_ENVELOPES_UPPER_perce | ent away | 0.073708 | 1.505188 |
| 10 11_1111E111 EEO1 EO_O1 1 E11_poloc | on_away | 0.07 07 00 | 1.000100 |

| Loss Mitigation Analysis | ount mean std min 25% 50% 75% max |
|---|--|
| ADX | ount mean std min 25% 50% 75% max 282.0 0.049513 9.803708e-01 -1.813218 -0.688881 -0.058818 0.623565 2.736595 |
| AROON DOWN | 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.0 |
| AROON UP | 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.000 |
| ATR | 282.0 -0.051244 1.005115e+00 -1.628203 -0.743487 -0.271639 0.583586 6.068822 |
| AWESOME CCI | 282.0 0.022461 1.012966e+00 -1.226371 -1.074040 0.509661 1.050535 2.47 282.0 0.024248 9.926805e-01 -1.531008 -1.000022 0.397235 0.924369 2.029616 |
| CHAIKIN | 282.0 -0.086880 9.536643e-01 -2.607515 -0.566546 -0.141128 0.193678 5.3338 |
| CMO | 282.0 0.018931 1.016797e+00 -2.904335 -0.717361 0.327454 0.634085 2.82105 |
| DISPARITY_INDEX | 282.0 -0.035807 1.105837e+00 -2.137917 -0.419287 -0.022680 -0.022680 1 |
| DM_ADX_PLOT | 282.0 0.049513 9.803708e-01 -1.813218 -0.688881 -0.058818 0.623565 2.7 |
| DM_DI_MINUS DM_DI_PLUS | 282.0 -0.009301 1.010059e+00 -2.558111 -0.959825 0.219146 0.889486 1.5 282.0 0.020964 1.049450e+00 -2.615010 -0.881587 0.266020 0.813952 6.27 |
| DYNAMIC_MOMENTUM | |
| FISHER_TRANSFORM | 282.0 0.019875 1.007371e+00 -1.176961 -1.176961 0.390931 1.112134 |
| LIN_REG_SLOPE | 282.0 0.036533 9.943955e-01 -1.830464 -1.000933 0.473789 0.888555 1. |
| MACD_AVG MACD_DEFAULT | 282.0 0.021469 1.034753e+00 -1.326140 -0.988827 0.485495 0.904673 5.61 282.0 0.024149 1.026481e+00 -1.280418 -1.011281 0.573910 0.936463 4 |
| MACD_DEFAULT MACD_DIFF | 282.0 0.007426 1.127565e+00 -13.332971 -0.483954 0.034977 0.652578 1.88 |
| MFI | 282.0 -0.051897 1.012326e+00 -2.461947 -0.779009 -0.078979 0.710738 2.009899 |
| MOMENTUM | 282.0 0.016977 1.016209e+00 -3.014107 -0.537387 0.453301 0.453301 2.9 |
| PFE | 282.0 0.021011 1.014940e+00 -1.279243 -1.153357 0.343290 1.112595 1.210506 |
| RIND RSI_AVERAGE | 282.0 -0.013950 9.636871e-01 -1.476926 -0.844876 -0.004671 0.601597 2.670262 282.0 0.011113 1.023039e+00 -1.626752 -0.971277 0.350446 0.936402 2.0 |
| RSI DEFAULT | 282.0 -0.025782 1.097254e+00 -1.712182 -0.712091 -0.087413 0.566531 9.7 |
| RSS | 282.0 0.029850 1.004144e+00 -1.576529 -1.083029 0.234439 1.050316 1.244371 |
| RVI | 282.0 0.020995 1.010308e+00 -1.336387 -1.035384 0.599108 0.985412 1.265072 |
| R_SQUARED STOCH FAST D | 282.0 -0.045264 8.472418e-01 -0.235038 -0.235038 -0.235038 -0.235038 5.58 282.0 0.034432 1.002130e+00 -1.187791 -1.017111 0.878811 0.955935 1 |
| STOCH_FAST_K | 282.0 -0.027380 9.930103e-01 -2.502313 -0.996574 -0.115166 0.974909 2. |
| TRIX_DEFAULT | 282.0 0.002579 1.026418e+00 -1.377299 -1.377299 -0.037796 1.301707 3.9 |
| TRIX_SIGNAL | 282.0 -0.013187 1.031340e+00 -1.406677 -1.406677 -0.044583 1.317511 4.04 |
| VOLUME VOLUME_DOWN | 282.0 -0.049965 9.433778e-01 -1.293255 -0.680353 -0.279130 0.318899 4.7970 |
| VOLUME UP | 282.0 -0.055657 8.940046e-01 -0.655680 -0.655680 0.378065 5.63 |
| VORTEX_MINUS | 282.0 -0.032101 1.007459e+00 -1.446793 -1.085350 -0.362463 1.083310 1 |
| VORTEX_PLUS | 282.0 0.026964 1.011454e+00 -1.515470 -1.061055 0.393074 1.029256 1.5 |
| VROC WILLIAMS_%R | 282.0 -0.063545 9.372147e-01 -0.838718 -0.650722 -0.347281 0.187118 5.95865 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.00 |
| strategy_amount | 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.000000 |
| account_amount | 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000 |
| DIV_BULL | 282.0 -0.034499 1.000166e+00 -0.971073 -0.971073 -0.971073 1.029789 1.029 |
| DIV_BEAR CHOP_INDEX | 282.0 0.034499 1.000166e+00 -1.029789 -1.029789 0.971073 0.971073 0.971 282.0 -0.037589 1.004762e+00 -3.903113 -0.686138 -0.447701 0.627669 3.0 |
| AROON_UP | 282.0 0.018331 1.009562e+00 -1.223579 -1.223579 0.933510 0.933510 0.93 |
| AROON_DOWN | 282.0 -0.035431 1.000142e+00 -1.159877 -1.159877 -0.236913 0.993562 0 |
| ACCUM_DIST | 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.00 |
| OBV WILLIAMSR | 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0.000000 |
| CHANDE_CMO | 282.0 0.018931 1.016797e+00 -2.904335 -0.717361 0.327454 0.634085 2. |
| TSI _ | 282.0 0.024112 1.024086e+00 -1.273517 -1.087860 0.345598 1.041812 3.502282 |
| 1000_SMA_percent_awa | ay 282.0 0.030995 1.019171e+00 -2.513960 -0.584851 0.113245 0.779873 |
| 144_SMA_percent_away | 282.0 0.004510 1.068332e+00 -2.052903 -0.850782 0.262622 0.759347 _LOWER_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.0000 |
| | _LOWER_percent_away 202.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 |
| 14_P_MA_ENVELOPES | UPPER percent away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.00000 |
| 236_EMA_percent_away | 282.0 0.008553 1.050629e+00 -2.365602 -0.770549 0.120690 0.741176 |
| 382_EMA_percent_away 618_EMA_percent_away | |
| 62_ZLEMA_percent_away | ay 282.0 -0.004513 1.088944e+00 -8.786650 -0.765457 -0.178955 0.850044 |
| 8_ZLEMA_percent_away | 282.0 -0.028149 1.026826e+00 -2.064178 -0.922537 -0.677924 0.965394 |
| ACCUM_DIST_percent_a | away 282.0 -0.012694 1.011185e+00 -1.307912 -0.707625 -0.295411 0.3149 |
| APZ_LOW_percent_away | |
| APZ_UPPER_percent_av | way 282.0 -0.021981 1.030291e+00 -2.062744 -0.916172 -0.627668 0.96014 |

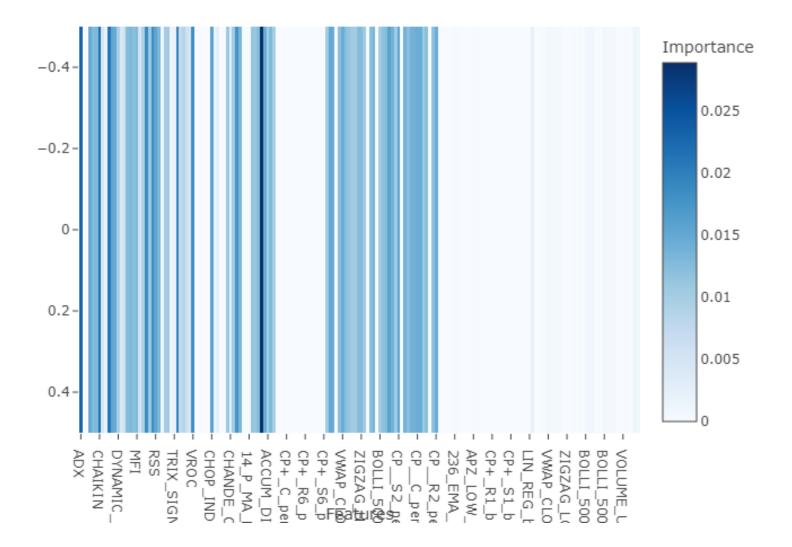
| Loss Mitigation Analysis |
|--|
| Loss Mitigation Analysis BOLLI_500_P_LOWER_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.0 |
| |
| BOLLI_500_P_MID_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 |
| BOLLI_500_P_UPPER_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.00 |
| CP+_C_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0 |
| CP+_R1_percent_away 282.0 0.0000000 0.00000000 0.0000000 0.000000 |
| |
| CP+_R2_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 |
| CP+_R3_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 |
| CP+_R4_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 |
| CP+_R5_percent_away 282.0 0.000000 0.0000000 0.0000000 0.000000 |
| |
| CP+_R6_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 |
| CP+_S1_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 (|
| CP+_S2_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 (|
| CP+_S3_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.0000000 0.000000 0.000000 0 |
| _ = = = / |
| |
| CP+_S5_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 (|
| CP+_S6_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 (|
| LIN_REG_percent_away 282.0 -0.029587 1.021581e+00 -1.886747 -0.939655 -0.672693 0.980936 |
| LIN_REG_INTERCEPT_percent_away 282.0 0.016940 1.094825e+00 -4.108710 -0.444161 -0.024974 0.4 |
| |
| OBV_percent_away 282.0 -0.012842 1.010093e+00 -1.365017 -0.719717 -0.291883 0.320587 5. |
| VROC_percent_away 282.0 -0.058659 8.099502e-01 -12.820067 0.003057 0.003057 0.003057 0 |
| VWAP percent away 282.0 0.002809 1.004723e+00 -3.266018 -0.384211 0.124443 0.563737 2 |
| VWAP_CLOUD_HIGH_percent_away 282.0 -0.002645 1.006844e+00 -4.131399 -0.149329 0.503452 0.6 |
| VWAP_CLOUD_LOW_percent_away 282.0 0.010580 9.917385e-01 -0.824993 -0.570834 -0.502365 0.2 |
| |
| VWAP_L1_percent_away 282.0 -0.019182 9.989105e-01 -2.417469 -0.598964 -0.082446 0.456307 |
| VWAP_L2_percent_away 282.0 -0.038908 9.871425e-01 -1.854221 -0.791780 -0.260237 0.393383 |
| VWAP_U1_percent_away 282.0 0.019269 1.003441e+00 -3.815452 -0.417688 0.264211 0.651381 |
| VWAP_U2_percent_away 282.0 0.029582 9.999634e-01 -4.005351 -0.417683 0.368282 0.748391 |
| |
| ZIGZAG_HIGH_percent_away 282.0 -0.041770 1.054654e+00 -6.776238 -0.215753 0.378710 0.45403 |
| ZIGZAG_LOW_percent_away 282.0 0.036200 1.171552e+00 -0.944474 -0.343171 -0.289965 0.14853 |
| VOLUME_UP_percent_away 282.0 -0.047565 6.951230e-18 -0.047565 -0.047565 -0.047565 -0.047565 -0.047565 |
| CPR6_percent_away 282.0 0.000382 9.916555e-01 -2.375819 -0.671233 -0.143980 0.752038 3 |
| CP_S6_percent_away 282.0 0.044053 1.004400e+00 -1.449825 -0.840122 -0.110346 0.717425 |
| _ |
| CHAIKIN_percent_away 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.000000 0 |
| BOLLI_500_UPPER_percent_away 282.0 0.006264 1.015100e+00 -3.293801 -0.562450 0.198008 0.764 |
| CPS3_percent_away 282.0 0.045772 9.933939e-01 -2.007922 -0.554352 0.123400 0.662888 2 |
| BOLLI_500_LOWER_percent_away 282.0 0.015484 1.028041e+00 -1.997646 -0.722584 0.018416 0.61 |
| 14_MA_ENVELOPES_UPPER_percent_away 282.0 -0.021877 1.048537e+00 -2.598799 -0.885355 -0.514554 |
| |
| 14_MA_ENVELOPES_LOWER_percent_away |
| 14_MA_ENVELOPES_MID_percent_away 282.0 -0.021869 1.048554e+00 -2.598746 -0.884878 -0.514494 (|
| CPS2_percent_away 282.0 0.044880 9.919199e-01 -2.029220 -0.506162 0.155924 0.646236 2 |
| VOLUME DOWN percent away 282.0 -0.047565 6.951230e-18 -0.047565 -0.047565 -0.047565 -0.047565 |
| CP_S1_percent_away 282.0 0.043698 9.904335e-01 -2.041064 -0.494352 0.167252 0.637817 3 |
| OlDi_percent_away |
| CPR5_percent_away 282.0 0.013927 9.865772e-01 -2.598704 -0.740874 0.112533 0.729940 3 |
| CPR4_percent_away 282.0 0.027637 9.843116e-01 -2.588438 -0.574794 0.137524 0.723421 3 |
| CPR1_percent_away 282.0 0.040403 9.876470e-01 -2.201605 -0.409971 0.167304 0.610947 3 |
| CPC_percent_away 282.0 0.042208 9.889878e-01 -2.080148 -0.455797 0.196951 0.640214 3 |
| CP_S5_percent_away 282.0 0.046440 1.001672e+00 -1.696463 -0.729306 -0.101163 0.714665 |
| |
| BOLLI_500_MID_percent_away 282.0 0.010989 1.022411e+00 -2.723396 -0.645269 0.118887 0.73782 |
| CPR3_percent_away 282.0 0.035910 9.855260e-01 -2.406092 -0.409735 0.177949 0.644104 3 |
| VOLUME_percent_away 282.0 -0.058243 6.951230e-18 -0.058243 -0.058243 -0.058243 -0.058243 |
| CPS4_percent_away 282.0 0.047041 9.973479e-01 -1.905339 -0.623597 0.016332 0.721191 2 |
| CP B2 percent away 282.0.0.038203.0.864752e-012.3111640.401045.0.170063.0.630357.2 |
| CPR2_percent_away 282.0 0.038293 9.864752e-01 -2.311164 -0.401945 0.170063 0.639357 3 1000_SMA_binary 282.0 0.531915 4.998675e-01 0.000000 0.000000 1.000000 1.000000 1.000000 |
| 1000_SMA_binary 282.0 0.531915 4.998675e-01 0.000000 0.000000 1.000000 1.00 |
| 144_SMA_binary 282.0 0.531915 4.998675e-01 0.000000 0.000000 1.000000 1.000000 1.00 |
| 14_P_MA_ENVÉLOPES_LOWER_binary 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 (|
| 14_P_MA_ENVELOPES_MID_binary 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0.0 |
| |
| 14_P_MA_ENVELOPES_UPPER_binary 282.0 0.000000 0.000000e+00 0.000000 0.000000 0.000000 0 |
| 236_EMA_binary 282.0 0.521277 5.004352e-01 0.000000 0.000000 1.000000 1.000000 1.00 |
| 382_EMA_binary 282.0 0.546099 4.987554e-01 0.000000 0.000000 1.000000 1.000000 1.00 |
| 618 EMA binary 282.0 0.546099 4.987554e-01 0.000000 0.000000 1.000000 1.000000 1.00 |
| 62 ZLEMA binary 282.0 0.475177 5.002712e-01 0.000000 0.000000 1.000000 1.0 |
| |
| 8_ZLEMA_binary 282.0 0.468085 4.998675e-01 0.000000 0.000000 0.000000 1.000000 1.00 |
| ACCUM_DIST_binary 282.0 0.0000000 0.0000000e+00 0.0000000 0.0000000 0.0000000 (|
| APZ_LOW_binary 282.0 0.992908 8.406521e-02 0.000000 1.000000 1.000000 1.000000 1.0 |
| = - , |

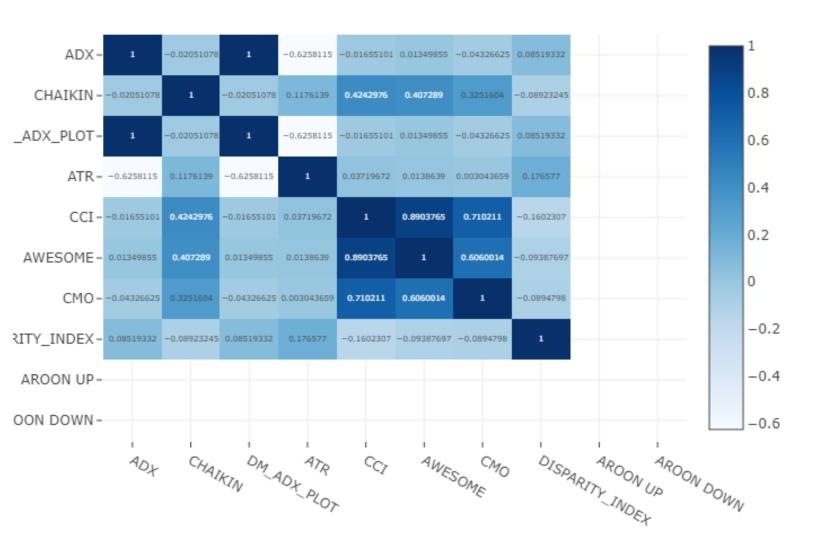




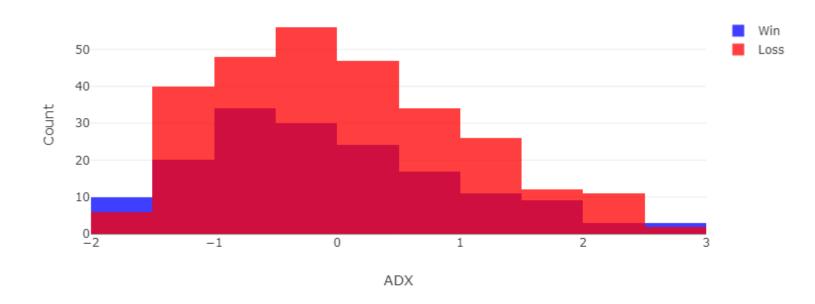


Importance

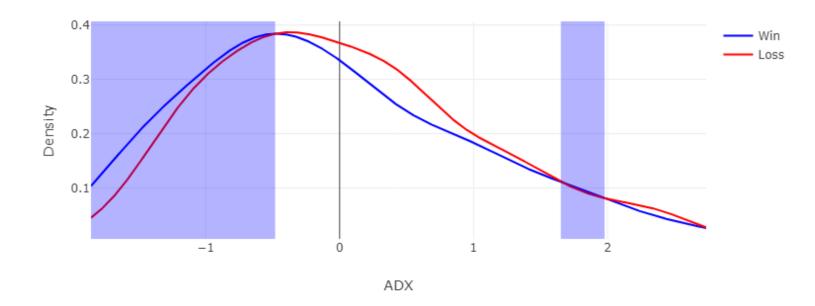




Distribution of ADX for Winning and Losing Trades



KDE Plot with Optimal Win Ranges for ADX



Mean Indicator Values for Losses

