|  | 1 | 2 | 3 | 4 | 5 | Mean | Std Dev |
|---|---|---|---|---|---|---|---|
|  |  |  | Slip Detection |  |  |  |  |
|  |  |  | DNN |  |  |  |  |
| Accuracy | 0.9857615606 | 0.9852825916572323 | 0.9841940259514065 | 0.9841504833 | 0.9856309327 | 0.9851809922 | 0.0008948336754 |
| Precision | 0.9474782937 | 0.9731441273 | 0.9658341934579922 | 0.9493934124 | 0.9568224865 | 0.95670958 | 0.01167404596 |
| F_score | 0.9471069762 | 0.9418166771722590 | 0.9378643116893338 | 0.9399407168 | 0.9453338903 | 0.9441271944 | 0.003732412721 |
| Recall | 0.9467363943 | 0.9149817998920424 | 0.9135660388958061 | 0.9309484425 | 0.9345094776 | 0.9373981048 | 0.008280880467 |
|  |  |  |  |  |  |  |  |
|  |  |  | CNN |  |  |  |  |
| Accuracy | 0.987549592 | 0.9870242968 | 0.986763041 | 0.9863561591 | 0.9865013063 | 0.986838879 | 0.0004722864381 |
| Precision | 0.9621549491 | 0.9624255603 | 0.9598156134 | 0.941105813 | 0.9450088007 | 0.9541021473 | 0.01022697623 |
| F_score | 0.9534400224 | 0.9508584118 | 0.986763041 | 0.9521764361 | 0.9522512432 | 0.9590978309 | 0.01549228957 |
| Recall | 0.9451068793 | 0.9399564879 | 0.9442087955 | 0.9639443913 | 0.9597850433 | 0.9506003195 | 0.01056815995 |
|  |  |  |  |  |  |  |  |
|  |  |  | CNN (SMOTE) |  |  |  |  |
| Accuracy | 0.985324208 | 0.9893459395 | 0.9896987229 | 0.9911568946 | 0.9872997954 | 0.9885651121 | 0.002275773878 |
| Precision | 0.9854373207 | 0.9894080381 | 0.9897014232 | 0.9912020012 | 0.987596846 | 0.9886691259 | 0.002214804455 |
| F_score | 0.9853230046 | 0.9893454091 | 0.9896986064 | 0.9911564803 | 0.9872971723 | 0.9885641345 | 0.002276389099 |
| Recall | 0.9853107857 | 0.9893362454 | 0.989696775 | 0.9911457062 | 0.9872685781 | 0.9885516181 | 0.002280652508 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  | Slip Prediction |  |  |  |  |
|  |  |  | DNN |  |  |  |  |
|  | T + 5 |  |  |  |  |  |  |
| Accuracy | 0.986151668 | 0.9870807893 | 0.9869038138 | 0.985443766 | 0.9797363065 | 0.9850632687 | 0.003048110606 |
| Precision | 0.9577068799 | 0.9637640373 | 0.9526228377 | 0.9516267672 | 0.9354397173 | 0.9522320479 | 0.01055298552 |
| F_score | 0.9507191269 | 0.9537412563 | 0.9677477111 | 0.9486384584 | 0.9277155833 | 0.9497124272 | 0.0143834186 |
| Recall | 0.9439832809 | 0.9442245274 | 0.9386218001 | 0.9456975187 | 0.9203151973 | 0.9385684649 | 0.01055129499 |
|  |  |  |  |  |  |  |  |
|  | T + 10 |  |  |  |  |  |  |
| Accuracy | 0.9811592248 | 0.9788209902 | 0.9711317955 | 0.9819236476 | 0.9812041908 | 0.9788479698 | 0.004469159463 |
| Precision | 0.9392829999 | 0.9224317549 | 0.8746630164 | 0.9494753746 | 0.9219887827 | 0.9215683857 | 0.02869513632 |
| F_score | 0.9309847478 | 0.9241625688 | 0.9048095612 | 0.9325900336 | 0.9344306358 | 0.9253955094 | 0.01214429576 |
| Recall | 0.923053837 | 0.9259106601 | 0.9418089711 | 0.9171482781 | 0.9478040524 | 0.9311451597 | 0.01303857508 |
|  |  |  |  |  |  |  |  |
|  | T + 15 |  |  |  |  |  |  |
| Accuracy | 0.97568 | 0.97568 | 0.9757714286 | 0.97248 | 0.9735314286 | 0.9746285714 | 0.001527842283 |
| Precision | 0.9257132582 | 0.9183743842 | 0.9213607418 | 0.903505242 | 0.9341344048 | 0.9206176062 | 0.01125929415 |
| F_score | 0.908843646 | 0.9106750195 | 0.9103425758 | 0.8998391219 | 0.8964276871 | 0.9052256101 | 0.006621693268 |
| Recall | 0.8934966872 | 0.903309134 | 0.8999942834 | 0.8962527864 | 0.8657016063 | 0.8917508995 | 0.01502852786 |

| | T + 20 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Accuracy | 0.9682967646 | 0.9601152845 | 0.9705280774 | 0.9611379695 | 0.9657865377 | 0.9651729267 | 0.004490911502 | | |
| Precision | 0.9333957018 | 0.8916796905 | 0.9435577597 | 0.9158949433 | 0.9362659378 | 0.9241588066 | 0.0208050875 | | |
| F_score | 0.8802462089 | 0.8520987047 | 0.8885403576 | 0.8483504771 | 0.8668236437 | 0.8672118784 | 0.01738612237 | | |
| Recall | 0.8405213702 | 0.8210583158 | 0.847529639 | 0.8023858284 | 0.8191375337 | 0.8261265374 | 0.01805171926 | | |
| | | | CNN | | | | | CNN (SMOTE) | |
| | T + 5 | | | | | | | T+ 5 | |
| Accuracy | 0.9878329351 | 0.9881868861 | 0.9860189364 | 0.9851340589 | 0.9855764977 | 0.9865498628 | 0.001374767537 | 0.98760528 | |
| Precision | 0.9657550494 | 0.9589942931 | 0.9678462626 | 0.94954097 | 0.9633510705 | 0.9610975291 | 0.007250758729 | 0.98760268 | |
| F_score | 0.9562814769 | 0.9581404388 | 0.9493112343 | 0.9473926664 | 0.9474776386 | 0.951720691 | 0.005112599684 | 0.98760514 | |
| Recall | 0.9472583032 | 0.9572904043 | 0.9324475047 | 0.9452690105 | 0.9328499887 | 0.9430230423 | 0.01051038107 | 0.98761676 | |
| | T + 10 | | | | | | | T + 10 | |
| Accuracy | 0.9838122218 | 0.9753136382 | 0.9851612033 | 0.9783713296 | 0.984037052 | 0.981339089 | 0.004275441519 | 0.98124923 | |
| Precision | 0.9475585145 | 0.8836102657 | 0.9633801428 | 0.9651910641 | 0.9546271949 | 0.9428734364 | 0.03387781615 | 0.98132257 | |
| F_score | 0.9421773228 | 0.9203108964 | 0.9445998755 | 0.9140616524 | 0.9409956578 | 0.932429081 | 0.01414881205 | 0.98124887 | |
| Recall | 0.9369497213 | 0.9672199135 | 0.9275408844 | 0.8745146568 | 0.9283039916 | 0.9269058335 | 0.03344136008 | 0.98126512 | |
| | T + 15 | | | | | | | T + 15 | |
| Accuracy | 0.9738514286 | 0.9770514286 | 0.9743542857 | 0.9773714286 | 0.9770971429 | 0.9759451429 | 0.001695562516 | 0.96058307 | |
| Precision | 0.906207222 | 0.9344748023 | 0.9472363442 | 0.9370651088 | 0.9241295396 | 0.9298226034 | 0.01555178785 | 0.96079659 | |
| F_score | 0.9120510644 | 0.9189061529 | 0.904295679 | 0.9197514407 | 0.9213213673 | 0.9152651408 | 0.007083803963 | 0.96058083 | |
| Recall | 0.9181068975 | 0.9046285065 | 0.8701062588 | 0.9040152689 | 0.9185582958 | 0.9030830455 | 0.01972261046 | 0.96063267 | |
| | T + 20 | | | | | | | T + 20 | |
| Accuracy | 0.9684362216 | 0.9726199331 | 0.9687151357 | 0.9657865377 | 0.9701097062 | 0.9691335069 | 0.002498578403 | 0.95168008 | |
| Precision | 0.9147543795 | 0.9296970836 | 0.9576633897 | 0.8788590546 | 0.9598526137 | 0.9281653042 | 0.03349450749 | 0.95420455 | |
| F_score | 0.879354612 | 0.8959808191 | 0.8692367926 | 0.8794887474 | 0.8761563681 | 0.8800434678 | 0.009832028994 | 0.95161817 | |
| Recall | 0.8504567526 | 0.8679944481 | 0.8128444384 | 0.8801210204 | 0.8213744976 | 0.8465582314 | 0.02903450939 | 0.95175322 | |