Model evaluation

| Dataset | Model | R2 | RMSE |
| --- | --- | --- | --- |
| Noraxon | LASSO-left KAM | 0.5186 | 0.007696 |
| LASSO -right KAM | 0.3987 | 0.008625 |
| Random forest-left KAM | 0.9349 | 0.002851 |
| Random forest-right KAM | 0.9296 | 0.002956 |
| IoT | LASSO -left KAM | 0.47452 | 0.007616 |
| LASSO -right KAM | 0.2355 | 0.009253 |
| Random forest-left KAM | 0.9386 | 0.002628 |
| Random forest-right KAM | 0.9385 | 0.002624 |

|  |  |
| --- | --- |
| TP | true positive |
| TN | true negative |
| FP | false positive |
| FN | false negative |

Confusion matrix result

| Model | R2 | RMSE | Mean KAM | RMSE/mean | TP | TN | FP | FN |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Noraxon  Random forest-L | 0.9094 | 0.0028 | 0.0168 | 0.1730 | 0.8427 | 0.9595 | 0.0405 | 0.1573 |
| Noraxon  Random forest-R | 0.9198 | 0.002736 | 0.0181 | 0.15495 | 0.8623 | 0.9587 | 0.0412 | 0.1376 |
| IoT  Random forest-L | 0.9664 | 0.00165 | 0.01658 | 0.1021 | 0.9229 | 0.9805 | 0.0195 | 0.07700 |
| IoT  Random forest-R | 0.9556 | 0.001782 | 0.0148 | 0.123 | 0.9131 | 0.9753 | 0.0247 | 0.08689 |

Dataset

| Dataset | Subjects | Left foot | Right foot |
| --- | --- | --- | --- |
| Noraxon | 22 | 20940 | 20504 |
| IoT | 12 | 11163 | 12525 |

Features

| Feature | Abbreviation | Feature | Abbreviation |
| --- | --- | --- | --- |
| Left lateral Accelerometer x | LLACx | Right lateral Gyroscope z | RLGYz |
| Left lateral Accelerometer y | LLACy | Right medial Accelerometer x | RMACx |
| Left lateral Accelerometer z | LLACz | Right medial Accelerometer y | RMACy |
| Left lateral Gyroscope x | LLGYx | Right medial Accelerometer z | RMACz |
| Left lateral Gyroscope y | LLGYy | Right medial Gyroscope x | RMGYx |
| Left lateral Gyroscope z | LLGYz | Right medial Gyroscope y | RMGYy |
| Left medial Accelerometer x | LMACx | Right medial Gyroscope z | RMGYz |
| Left medial Accelerometer y | LMACy | age | age |
| Left medial Accelerometer z | LMACz | mass | mass |
| Left medial Gyroscope x | LMGYx | height | height |
| Left medial Gyroscope y | LMGYy | Left leg length | Lleglen |
| Left medial Gyroscope z | LMGYz | Left knee width | LkneeWid |
| Right lateral Accelerometer x | RLACx | Right leg length | Rleglen |
| Right lateral Accelerometer y | RLACy | Left ankle width | LankleWid |
| Right lateral Accelerometer z | RLACz | Right knee width | RkneeWid |
| Right lateral Gyroscope x | RLGYx | Right ankle width | RankleWid |
| Right lateral Gyroscope y | RLGYy | gender | gender |