Regression:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type: | Sub: | RMSE | Explained Variance | Runtime |
| RF | **NONE** | **1.94 (+/- 0.32)** | **0.87 (+/- 0.02)** | **1.01523** |
|  | T1, 5 | 2.30 (+/- 0.34) | 0.81 (+/- 0.03) | 0.59713 |
|  | T1, 10 | 1.94 (+/- 0.30) | 0.87 (+/- 0.01) | 0.69716 |
|  | T2 | 2.13 (+/- 0.22) | 0.84 (+/- 0.03) | 0.65215 |
|  | FS T3 | 1.99 (+/- 0.31) | 0.86 (+/- 0.01) | 0.69016 |
| Gradient Boost | **NONE** | **1.71 (+/- 0.26)** | **0.90 (+/- 0.02)** | **0.89420** |
|  | T1, 5 | 1.78 (+/- 0.16) | 0.88 (+/- 0.05) | 0.22505 |
|  | T1, 10 | 1.72 (+/- 0.26) | 0.89 (+/- 0.03) | 0.34608 |
|  | T2 | 1.75 (+/- 0.18) | 0.89 (+/- 0.03) | 0.32507 |
|  | T3 | 1.78 (+/- 0.18) | 0.89 (+/- 0.04) | 0.34308 |
| ADA Boost | NONE | 1.81 (+/- 0.18) | 0.88 (+/- 0.03) | 1.07924 |
|  | T1, 5 | 1.83 (+/- 0.17) | 0.88 (+/- 0.02) | 0.57013 |
|  | **T1, 10** | **1.81 (+/- 0.20)** | **0.88 (+/- 0.03)** | **0.65315** |
|  | T2 | 1.88 (+/- 0.12) | 0.87 (+/- 0.04) | 0.63314 |
|  | T3 | 1.85 (+/- 0.23) | 0.88 (+/- 0.03) | 0.65614 |
| Neural Netowrk | NONE | 4.39 (+/- 1.56) | 0.31 (+/- 0.38) | 1.69689 |
|  | **T1, 5** | **2.79 (+/- 2.20)** | **0.69 (+/- 0.46)** | **1.76140** |
|  | T1,10 | 3.56 (+/- 2.10) | 0.50 (+/- 0.54) | 1.56335 |
|  | T2 | 3.10 (+/- 1.90) | 0.64 (+/- 0.40) | 1.96244 |
|  | T3 | 3.87 (+/- 1.31) | 0.47 (+/- 0.25) | 1.95544 |

Features selected:

RF, t1, 5: ['Sh', 'Cmp\_M', 'Att\_M', 'Left', 'Rating19']

RF, t1, 10: ['Age', 'MP', 'Min', 'Sh', 'Cmp\_M', 'Att\_M', 'Att\_L', 'Left', 'Right', 'Rating19']

RF, t2: ['Age', 'Min', 'Cmp\_M', 'Att\_M', 'Cmp\_L', 'Att\_L', 'Left', 'PPA', 'Rating19']

RF, t3: ['MP', 'Starts', 'Sh', 'Cmp\_M', 'Att\_M', 'Cmp\_L', 'Right', 'Pass13', 'PPA', 'Rating19']

Regression with Normalization:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type: | Sub: | RMSE | Explained Variance | Runtime |
| RF | NONE | 1.94 (+/- 0.32) | 0.87 (+/- 0.02) | 1.03524 |
|  | T1, 5 | 2.29 (+/- 0.33) | 0.81 (+/- 0.03) | 0.59413 |
|  | **T1, 10** | **1.94 (+/- 0.29)** | **0.87 (+/- 0.02)** | **0.67516** |
|  | T2 | 2.14 (+/- 0.22) | 0.84 (+/- 0.03) | 0.64114 |
|  | FS T3 | 1.99 (+/- 0.26) | 0.86 (+/- 0.02) | 0.69116 |
| Gradient Boost | **NONE** | **1.71 (+/- 0.27)** | **0.90 (+/- 0.02)** | **0.87820** |
|  | T1, 5 | 1.77 (+/- 0.16) | 0.89 (+/- 0.05) | 0.22406 |
|  | T1, 10 | 1.72 (+/- 0.26) | 0.89 (+/- 0.03) | 0.35007 |
|  | T2 | 1.75 (+/- 0.18) | 0.89 (+/- 0.03) | 0.33258 |
|  | T3 | 1.80 (+/- 0.29) | 0.88 (+/- 0.05) | 0.34708 |
| ADA Boost | NONE | 1.84 (+/- 0.18) | 0.88 (+/- 0.03) | 1.07423 |
|  | T1, 5 | 1.82 (+/- 0.14) | 0.88 (+/- 0.02) | 0.57513 |
|  | **T1, 10** | **1.81 (+/- 0.16)** | **0.88 (+/- 0.03)** | **0.66215** |
|  | T2 | 1.86 (+/- 0.15) | 0.87 (+/- 0.04) | 0.64415 |
|  | T3 | 1.82 (+/- 0.21) | 0.88 (+/- 0.03) | 0.65115 |
| Neural Netowrk | NONE | 5.03 (+/- 0.18) | 0.09 (+/- 0.32) | 1.80641 |
|  | **T1, 5** | **1.97 (+/- 0.43)** | **0.86 (+/- 0.06)** | **1.58534** |
|  | T1,10 | 2.01 (+/- 0.28) | 0.85 (+/- 0.08) | 1.54335 |
|  | T2 | 2.29 (+/- 0.70) | 0.80 (+/- 0.22) | 1.56435 |
|  | T3 | 2.75 (+/- 0.63) | 0.72 (+/- 0.22) | 1.56435 |
| SVM | **NONE** | **1.77 (+/- 0.11)** | **0.89 (+/- 0.04)** | **0.31907** |
|  | T1, 5 | 1.89 (+/- 0.11) | 0.87 (+/- 0.06) | 0.03601 |
|  | T1,10 | 1.83 (+/- 0.15) | 0.88 (+/- 0.05) | 0.05101 |
|  | T2 | 1.82 (+/- 0.16) | 0.88 (+/- 0.05) | 0.04001 |
|  | T3 | 1.89 (+/- 0.18) | 0.87 (+/- 0.05) | 0.05201 |

Features Selected:

T1, 5: ['Sh', 'Cmp\_M', 'Att\_M', 'Left', 'Rating19']

T1, 10: ['Age', 'MP', 'Min', 'Sh', 'Cmp\_M', 'Att\_M', 'Att\_L', 'Left', 'Right', 'Rating19']

T2: ['Age', 'Min', 'Cmp\_M', 'Att\_M', 'Cmp\_L', 'Att\_L', 'Left', 'PPA', 'Rating19']

T3: ['Starts', 'Min', 'Sh', 'Cmp\_M', 'Att\_M', 'Cmp\_L', 'Right', 'Pass13', 'PPA', 'Rating19']

Classification:

No Normalization:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type: | Sub: | ACCURACY | AUC | Runtime |
| RF | None | 0.72 (+/- 0.10) | 0.76 (+/- 0.12) | 0.93421 |
|  | **Feat Select T1, k\_cnt 5** | **0.71 (+/- 0.05)** | **0.78 (+/- 0.05)** | **0.77618** |
|  | Feat Select T1, k\_cnt 10 | 0.70 (+/- 0.08) | 0.77 (+/- 0.09) | 0.84770 |
|  | Feat Select T2 | 0.71 (+/- 0.06) | 0.76 (+/- 0.09) | 0.95822 |
|  | FS T3 | 0.65 (+/- 0.08) | 0.71 (+/- 0.09) | 0.80419 |
| Gradient Boost | NONE | 0.70 (+/- 0.11) | 0.77 (+/- 0.08) | 1.00822 |
|  | T1, 5 | 0.71 (+/- 0.08) | 0.77 (+/- 0.07) | 0.34808 |
|  | **T1, 10** | **0.72 (+/- 0.11)** | **0.78 (+/- 0.07)** | **0.47011** |
|  | T2 | 0.71 (+/- 0.09) | 0.77 (+/- 0.10) | 0.79212 |
|  | T3 | 0.65 (+/- 0.08) | 0.72 (+/- 0.09) | 0.40308 |
| ADA Boost | NONE | 0.72 (+/- 0.07) | 0.78 (+/- 0.09) | 0.94621 |
|  | T1, 5 | 0.72 (+/- 0.08) | 0.80 (+/- 0.06) | 0.70916 |
|  | **T1, 10** | **0.74 (+/- 0.07)** | **0.81 (+/- 0.07)** | **0.73517** |
|  | T2 | 0.70 (+/- 0.08) | 0.78 (+/- 0.10) | 0.88571 |
|  | T3 | 0.68 (+/- 0.11) | 0.75 (+/- 0.11) | 0.71016 |
| Neural Netowrk | **NONE** | **0.63 (+/- 0.15)** | **0.62 (+/- 0.16)** | **2.61959** |
|  | T1, 5 | 0.61 (+/- 0.04) | 0.62 (+/- 0.06) | 0.69415 |
|  | T1,10 | 0.61 (+/- 0.05) | 0.60 (+/- 0.11) | 1.18027 |
|  | T2 | 0.60 (+/- 0.04) | 0.59 (+/- 0.08) | 2.17049 |
|  | T3 | 0.64 (+/- 0.14) | 0.67 (+/- 0.13) | 3.17222 |

Features Selected:

RF, t1, 5: ['Age', 'Min', 'Right', 'Dr\_Att', 'Rating19']

RF, t1, 10: ['Age', 'Min', 'Sh', 'Att\_S', 'Left', 'Right', 'Pass13', 'Dr\_Att', 'Tkl', 'Rating19']

RF, t2: ['Age', 'MP', 'Starts', 'Min', 'Sh', 'Cmp\_S', 'Att\_S', 'Cmp\_M', 'Att\_M', 'Cmp\_L', 'Att\_L', 'Left', 'Right', 'TI', 'Pass13', 'Fls', 'Fld', 'Crs', 'TklW', 'Succ', 'Dr\_Att', 'Tkl', 'D\_Cont', 'Past\_D', 'Rating19'] (25)

RF, t3: ['Age', 'MP', 'Ast', 'Sh', 'Cmp\_S', 'Cmp\_L', 'TB', 'TklW', 'Megs', 'D\_Cont'] (10)

Classification with Normalization:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type: | Sub: | ACCURACY | AUC | Runtime |
| RF | None | 0.72 (+/- 0.10) | 0.75 (+/- 0.12) | 0.93322 |
|  | **T1, 5** | **0.71 (+/- 0.07)** | **0.77 (+/- 0.05)** | **0.79819** |
|  | T1, 10 | 0.70 (+/- 0.08) | 0.77 (+/- 0.08) | 0.82412 |
|  | Feat Select T2 | 0.70 (+/- 0.07) | 0.76 (+/- 0.09) | 0.95821 |
|  | FS T3 | 0.66 (+/- 0.13) | 0.73 (+/- 0.10) | 0.78918 |
| Gradient Boost | NONE | 0.70 (+/- 0.11) | 0.77 (+/- 0.08) | 1.00322 |
|  | T1, 5 | 0.71 (+/- 0.08) | 0.77 (+/- 0.07) | 0.35908 |
|  | **T1, 10** | **0.72 (+/- 0.10)** | **0.78 (+/- 0.07)** | **0.48611** |
|  | T2 | 0.71 (+/- 0.08) | 0.76 (+/- 0.10) | 0.79718 |
|  | T3 | 0.69 (+/- 0.07) | 0.75 (+/- 0.07) | 0.40509 |
| ADA Boost | NONE | 0.72 (+/- 0.07) | 0.78 (+/- 0.09) | 0.96622 |
|  | T1, 5 | 0.72 (+/- 0.08) | 0.80 (+/- 0.06) | 0.69316 |
|  | **T1, 10** | **0.74 (+/- 0.07)** | **0.81 (+/- 0.07)** | **0.74517** |
|  | T2 | 0.70 (+/- 0.08) | 0.78 (+/- 0.10) | 0.87121 |
|  | T3 | 0.69 (+/- 0.05) | 0.76 (+/- 0.07) | 0.71016 |
| Neural Netowrk | **NONE** | **0.72 (+/- 0.10)** | **0.80 (+/- 0.09)** | **3.37927** |
|  | T1, 5 | 0.72 (+/- 0.06) | 0.79 (+/- 0.03) | 1.29930 |
|  | T1,10 | 0.72 (+/- 0.07) | 0.79 (+/- 0.04) | 1.19926 |
|  | T2 | 0.69 (+/- 0.08) | 0.79 (+/- 0.05) | 2.08596 |
|  | T3 | 0.70 (+/- 0.05) | 0.73 (+/- 0.07) | 1.10176 |
| SVM | NONE | 0.73 (+/- 0.08) | 0.79 (+/- 0.10) | 0.34808 |
|  | T1, 5 | 0.73 (+/- 0.06) | 0.79 (+/- 0.03) | 0.05501 |
|  | T1, 10 | 0.72 (+/- 0.05 | 0.80 (+/- 0.04) | 0.09102 |
|  | T2 | 0.69 (+/- 0.05) | 0.78 (+/- 0.02) | 0.18504 |
|  | **T3** | **0.72 (+/- 0.09)** | **0.81 (+/- 0.09)** | **0.07602** |

Features Selected:

RF, t1, 5: ['Age', 'Min', 'Right', 'Dr\_Att', 'Rating19']

RF, t1, 10: ['Age', 'Min', 'Sh', 'Att\_S', 'Left', 'Right', 'Pass13', 'Dr\_Att', 'Tkl', 'Rating19']

RF, t2: ['Age', 'MP', 'Starts', 'Min', 'Sh', 'Cmp\_S', 'Att\_S', 'Cmp\_M', 'Att\_M', 'Cmp\_L', 'Att\_L', 'Left', 'Right', 'TI', 'Pass13', 'Fls', 'Fld', 'Crs', 'TklW', 'Succ', 'Dr\_Att', 'Tkl', 'D\_Cont', 'Past\_D', 'Rating19']

RF, t3: ['Age', 'MP', 'Starts', 'CrsPA', 'Fls', 'TklW', 'Dr\_Att', 'Megs', 'Tkl', 'Past\_D']