# Appendix

Apx 1: Target set (ideal HR/Temp to Urgency Level)

Target Dataset

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Temp/HR | 31-39 | 40-45 | 46-55 | 56-69 | 70-78 | 74-84 | 85-100 |  |
| 30-33 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | Targetted Urgency Level |
| 33-35 | 100 | 80 | 80 | 80 | 85 | 90 | 100 |
| 35 | 100 | 70 | 60 | 65 | 75 | 80 | 100 |
| 36-37 | 100 | 40 | 10 | 5 | 5 | 40 | 100 |
| 38 | 100 | 60 | 30 | 20 | 30 | 60 | 100 |
| 38-41 | 100 | 80 | 70 | 65 | 70 | 80 | 100 |
| 42-46.5 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Apx 2: surface graph of ideal target set

Apx 3 Model results

Model 1 Results

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | TRiMF | |  |  |  |  |
|  | 31-39 | 40-45 | 46-55 | 56-69 | 70-78 | 74-84 | 85-100 |  |
| 30-33 | 225 | 225 | 1207.563 | 3471.566 | 3471.566 | 3362.84 | 225 | Actual Urgency Level |
| 33-35 | 225 | 25 | 84.4561 | 1032.98 | 1379.38 | 1690.032 | 225 |
| 35 | 225 | 225 | 626.0004 | 1481.48 | 1842.126 | 2234.453 | 225 |
| 36-37 | 1141.764 | 1600 | 100 | 272.5801 | 100 | 535.9225 | 225 |
| 38 | 1301.766 | 25 | 24.8004 | 214.6225 | 100 | 1031.694 | 225 |
| 38-41 | 225 | 25 | 1226.4 | 1281.64 | 1810.503 | 3600 | 225 |
| 42-46.5 | 225 | 225 | 895.8049 | 2718.58 | 3205.824 | 3151.7 | 225 |
| diff | -2868.53 | -1820 | -3715.02 | -10038.4 | -11444.4 | -15056.6 | -875 |  |
| diff^2 | 8228464 | 3312400 | 13801409 | 1.01E+08 | 1.31E+08 | 2.27E+08 | 765625 |  |
| sum/5 | 1645693 | 662480 | 2760282 | 20154090 | 26194854 | 45340491 | 153125 |  |
| RMSE | 1282.846 | 813.9287438 | 1661.41 | 4489.331 | 5118.091 | 6733.535 | 391.3119 |  |
| RMSE Avg | 2927.207 |  |  |  |  |  |  |  |

Model 2 Results

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | trapMF | |  |  |  |  |
|  | 31-39 | 40-45 | 46-55 | 56-69 | 70-78 | 74-84 | 85-100 |  |
| 30-33 | 86.11 | 86.11 | 54.92 | 43.66 | 43.66 | 43.66 | 86.11 | Actual Urgency Level |
| 33-35 | 86.11 | 86.11 | 54.92 | 43.66 | 43.66 | 43.66 | 86.11 |
| 35 | 86.11 | 85.58 | 33.87 | 33 | 43.66 | 43.66 | 86.11 |
| 36-37 | 43.66 | 28.19 | 28.19 | 33 | 18.83 | 33 | 86.11 |
| 38 | 68.64 | 69.94 | 33.87 | 33 | 43.66 | 43.66 | 86.11 |
| 38-41 | 86.11 | 85.57 | 54.94 | 43.66 | 43.66 | 18.53 | 86.11 |
| 42-46.5 | 86.11 | 86.11 | 54.92 | 43.66 | 43.66 | 43.66 | 86.11 |
| diff | 157.15 | 2.39 | 134.37 | 161.36 | 184.21 | 280.17 | 97.23 |  |
| diff^2 | 24696.12 | 5.7121 | 18055.3 | 26037.05 | 33933.32 | 78495.23 | 9453.673 |  |
| sum/5 | 4939.225 | 1.14242 | 3611.059 | 5207.41 | 6786.665 | 15699.05 | 1890.735 |  |
| RMSE | 70.27962 | 1.068840493 | 60.09209 | 72.16239 | 82.38122 | 125.2958 | 43.48258 |  |
| RMSE Avg | 64.96608 |  |  |  |  |  |  |  |

Apx3 continued

Model 3 Results

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | gaussMF | |  |  |  |  |
|  | 31-39 | 40-45 | 46-55 | 56-69 | 70-78 | 74-84 | 85-100 |  |
| 30-33 | 92.94 | 62.96 | 62.96 | 46.04 | 46.1 | 46.9 | 73.6 | Actual Urgency Level |
| 33-35 | 92.82 | 62.71 | 62.71 | 45.81 | 45.84 | 46.64 | 73.39 |
| 35 | 74.78 | 51.14 | 49.08 | 38.51 | 34.74 | 33.92 | 56.9 |
| 36-37 | 33.86 | 13.71 | 15.83 | 28.34 | 22.69 | 33.24 | 30.09 |
| 38 | 32.59 | 43.42 | 48.73 | 36.4 | 37.66 | 43.73 | 50.24 |
| 38-41 | 69.75 | 48.71 | 50.03 | 26.99 | 39.14 | 11.12 | 50.24 |
| 42-46.5 | 90.26 | 61.57 | 54.21 | 25.47 | 44.68 | 14.76 | 57.72 |
| diff | 213 | 185.78 | 106.45 | 187.44 | 194.15 | 319.69 | 307.82 |  |
| diff^2 | 45369 | 34514.2084 | 11331.6 | 35133.75 | 37694.22 | 102201.7 | 94753.15 |  |
| sum/5 | 9073.8 | 6902.84168 | 2266.321 | 7026.751 | 7538.845 | 20440.34 | 18950.63 |  |
| RMSE | 95.2565 | 83.08334177 | 47.60589 | 83.82572 | 86.82652 | 142.9697 | 137.6613 |  |
| RMSE Avg | 96.74699 |  |  |  |  |  |  |  |

Final Model Results 1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | MixedMF's | |  |  |  |  |
|  | 31-39 | 40-45 | 46-55 | 56-69 | 70-78 | 74-84 | 85-100 |  |
| 30-33 | 90.74 | 90.43 | 70.64 | 64.32 | 64.62 | 71.18 | 90.74 | Actual Urgency Level |
| 33-35 | 90.74 | 79.233 | 48.9 | 49.41 | 49.41 | 70.49 | 90.74 |
| 35 | 90.74 | 72.03 | 42.28 | 45.52 | 45.52 | 67.2 | 90.74 |
| 36-37 | 90.74 | 61.05 | 36.04 | 35.86 | 35.86 | 57.99 | 90.68 |
| 38 | 90.7 | 61.01 | 36.07 | 38.27 | 40.32 | 62.7 | 62.7 |
| 38-41 | 89.61 | 61.56 | 46.9 | 50.19 | 41.07 | 60.25 | 89.25 |
| 42-46.5 | 57.93 | 80.7 | 63.84 | 53.95 | 62.78 | 60.96 | 77.63 |
| diff | 98.8 | 23.987 | 105.33 | 97.48 | 125.42 | 99.23 | 107.52 |  |
| diff^2 | 9761.44 | 575.376169 | 11094.41 | 9502.35 | 15730.18 | 9846.593 | 11560.55 |  |
| sum/5 | 1952.288 | 115.0752338 | 2218.882 | 1900.47 | 3146.035 | 1969.319 | 2312.11 |  |
| RMSE | 44.1847 | 10.72731252 | 47.10501 | 43.59438 | 56.08953 | 44.37701 | 48.08441 |  |
| RMSE Avg | 42.02319 |  |  |  |  |  |  |  |

Apx 4

Final Model Results

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Final Model | |  |  |  |  |
|  | 31-39 | 40-45 | 46-55 | 56-69 | 70-78 | 74-84 | 85-100 |  |
| 30-33 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 | Actual Urgency Level |
| 33-35 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 |
| 35 | 90.74 | 70 | 70 | 70 | 70 | 70 | 90.74 |
| 36-37 | 90.74 | 60 | 19.48 | 30 | 30 | 50 | 90.74 |
| 38 | 90.74 | 70 | 56.18 | 52.09 | 63.03 | 70 | 80.79 |
| 38-41 | 80.79 | 70 | 80.79 | 90.74 | 70 | 50 | 80.79 |
| 42-46.5 | 87.36 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 | 90.74 |
| diff | 78.15 | -12.22 | -48.67 | -80.05 | -40.25 | 37.78 | 84.72 |  |
| diff^2 | 6107.423 | 149.3284 | 2368.769 | 6408.003 | 1620.063 | 1427.328 | 7177.478 |  |
| sum/5 | 1221.485 | 29.86568 | 473.7538 | 1281.601 | 324.0125 | 285.4657 | 1435.496 |  |
| RMSE | 34.94974 | 5.464950137 | 21.76589 | 35.79945 | 18.00035 | 16.89573 | 37.88794 |  |
| RMSE Avg | 24.39486 |  |  |  |  |  |  |  |