Supervised ml algoritms part 2

### Case Study: Climate DatAset Exercise 1-5

The KNN model was good, but was closer to 55% training accuracy and average model accuracy on this specific dataset was close to 77%. Using the ANN model, the training accuracy went up to 65% and definitely would be able to improve further and overall accuracy on this dataset was >90%. In this case, ANN model is definitely better in my opinion. Compared to all three models, the third shows the highest accuracy for correctly predicted values.

Model 1 (KNN):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Weather Station** | **CORRECT** | | **FALSE -VE** | **FALSE +VE** | **ACCURACY** |
| BASEL | 3917 | 961 | 439 | 421 | **70.0%** |
| BELAGRADE | 3252 | 1544 | 418 | 524 | **67.2%** |
| BUDAPEST | 3424 | 1462 | 376 | 476 | **70.3%** |
| DEBILT | 4320 | 723 | 378 | 317 | **75.8%** |
| DUSSELDORF | 4164 | 810 | 421 | 343 | **73.4%** |
| HEATHROW | 4138 | 744 | 424 | 432 | **70.2%** |
| KASSEL | 4563 | 614 | 309 | 252 | **80.4%** |
| LJUBLJANA | 3740 | 1180 | 363 | 455 | **71.5%** |
| MAASTRICHT | 4253 | 824 | 352 | 309 | **77.0%** |
| MADRID | 2750 | 2261 | 309 | 418 | **74.7%** |
| MUNCHENB | 4237 | 792 | 400 | 309 | **75.3%** |
| OSLO | 4637 | 512 | 347 | 242 | **79.5%** |
| SONNBLICK | 5738 | 0 | 0 | 0 | **100.0%** |
| STOCKHOLM | 4483 | 607 | 365 | 283 | **77.4%** |
| VALENTIA | 5404 | 74 | 202 | 58 | **90.9%** |
|  |  |  |  | Average | **76.9%** |

**A screenshot of a computer screen

AI-generated content may be incorrect.**

Model 2:

A screenshot of a computer screen

AI-generated content may be incorrect.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| **Weather Station** | **CORRECT** | | **FALSE -VE** | **FALSE +VE** | **ACCURACY** |
| BASEL | 4181 | 1323 | 127 | 107 | **91.8%** |
| BELAGRADE | 3602 | 1888 | 108 | 140 | **91.4%** |
| BUDAPEST | 3763 | 1753 | 99 | 123 | **92.3%** |
| DEBILT | 4380 | 921 | 216 | 221 | **84.8%** |
| DUSSELDORF | 4442 | 1229 | 24 | 43 | **97.7%** |
| HEATHROW | 4208 | 975 | 270 | 285 | **80.7%** |
| KASSEL | 4583 | 844 | 154 | 157 | **89.2%** |
| LJUBLJANA | 4088 | 1548 | 42 | 60 | **96.4%** |
| MAASTRICHT | 4333 | 1042 | 158 | 205 | **87.3%** |
| MADRID | 2990 | 2386 | 165 | 197 | **87.4%** |
| MUNCHENB | 4359 | 1076 | 121 | 182 | **89.4%** |
| OSLO | 4679 | 797 | 136 | 126 | **90.9%** |
| SONNBLICK | 5738 | 0 | 0 | 0 | **100.0%** |
| STOCKHOLM | 4531 | 763 | 214 | 230 | **84.5%** |
| VALENTIA | 5261 | 128 | 183 | 166 | **87.8%** |
|  |  |  |  | Average | **90.1%** |

Model 3:

A screenshot of a color chart

AI-generated content may be incorrect.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Weather Station** | **CORRECT** | | **FALSE -VE** | **FALSE +VE** | **ACCURACY** |
| BASEL | 4118 | 1342 | 88 | 190 | **90.3%** |
| BELAGRADE | 3652 | 1778 | 218 | 90 | **89.3%** |
| BUDAPEST | 3715 | 1775 | 77 | 171 | **91.4%** |
| DEBILT | 4393 | 944 | 193 | 208 | **86.0%** |
| DUSSELDORF | 4374 | 1085 | 168 | 112 | **90.2%** |
| HEATHROW | 4270 | 1204 | 41 | 223 | **90.8%** |
| KASSEL | 4570 | 897 | 101 | 170 | **90.6%** |
| LJUBLJANA | 3840 | 1580 | 10 | 308 | **88.9%** |
| MAASTRICHT | 4384 | 1080 | 120 | 154 | **90.4%** |
| MADRID | 3112 | 2425 | 126 | 75 | **93.0%** |
| MUNCHENB | 4386 | 1052 | 145 | 152 | **89.6%** |
| OSLO | 4467 | 899 | 34 | 338 | **87.0%** |
| SONNBLICK | 5738 | 0 | 0 | 0 | **100.0%** |
| STOCKHOLM | 4481 | 963 | 14 | 280 | **89.8%** |
| VALENTIA | 5356 | 192 | 119 | 71 | **93.4%** |
|  |  |  |  | Average | **90.7%** |