Tobby Lie September 2, 2019 CSCI-5931 Programming Assignment 1

| Report |  |                       |                      |                        |                       |                     |                    |                       |                      |
|--------|--|-----------------------|----------------------|------------------------|-----------------------|---------------------|--------------------|-----------------------|----------------------|
|        | Configurations   | Accuracy<br>Train set | Accuracy<br>Test set | Precision<br>Train set | Precision<br>Test set | Recall<br>Train set | Recall<br>Test set | F1-Score<br>Train set | F1-Score<br>Test set |
| ANN-1  | 8x4, sigmoid<br>4x5, sigmoid<br>5x4, sigmoid<br>4x5, sigmoid<br>5x4, sigmoid<br>4x1, sigmoid<br>Epoch=100<br>Scaling=yes | 0.8601                | 0.8444               | 0.7528                 | 0.6428                | 0.4526              | 0.4007             | 0.5414                | 0.4670               |
| ANN-2  | 8x11, relu<br>11x9, relu<br>9x5, relu<br>5x3, sigmoid<br>3x1, sigmoid<br>Epoch=100<br>Scaling=yes                        | 0.8664                | 0.8372               | 0.7796                 | 0.6307                | 0.4792              | 0.3798             | 0.5654                | 0.4467               |
| ANN-3  | 8x11, sigmoid<br>11x15, sigmoid<br>15x5, sigmoid<br>5x30, sigmoid<br>30x1, sigmoid<br>Epoch=1000<br>Scaling=yes          | 0.8681                | 0.8433               | 0.7944                 | 0.6696                | 0.4642              | 0.3807             | 0.5588                | 0.4618               |
| ANN-4  | 8x200, sigmoid<br>200x150, sigmoid<br>150x50, relu<br>50x120, sigmoid<br>120x1, sigmoid<br>Epoch=100<br>Scaling=yes      | 0.8643                | 0.8400               | 0.7789                 | 0.6642                | 0.4605              | 0.3679             | 0.5495                | 0.4486               |

**NOTE**: F1-SCORE NOT EXACT VALUE BECAUSE K.EPSILON IS UTILIZED IN DENOMINATOR IN ORDER TO ENSURE THERE ARE NO DIVIDE BY ZERO ERRORS SO AS EPOCH INCREASES THE VALUE OF F1-SCORE BECOMES INFLATED.