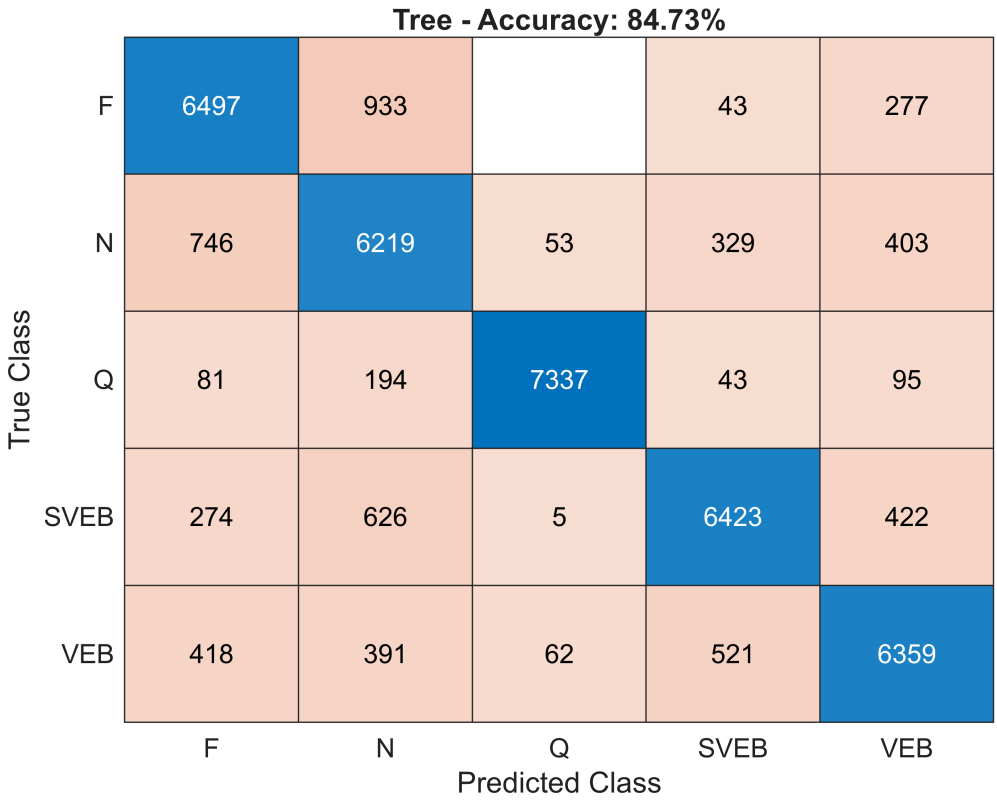
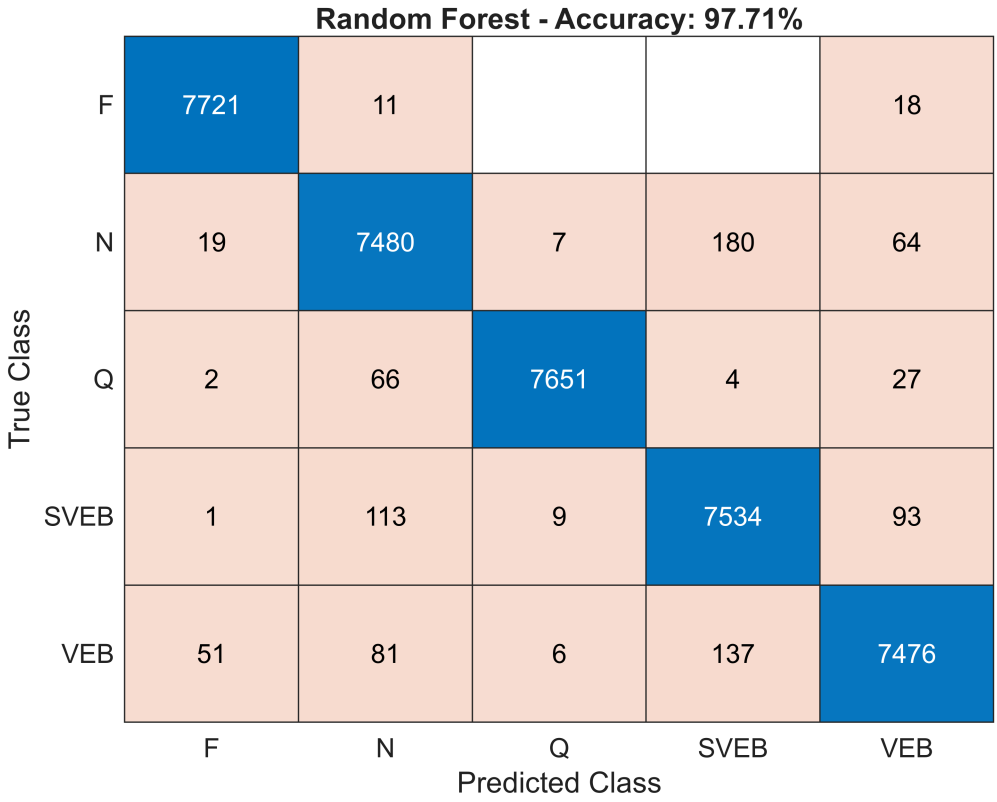
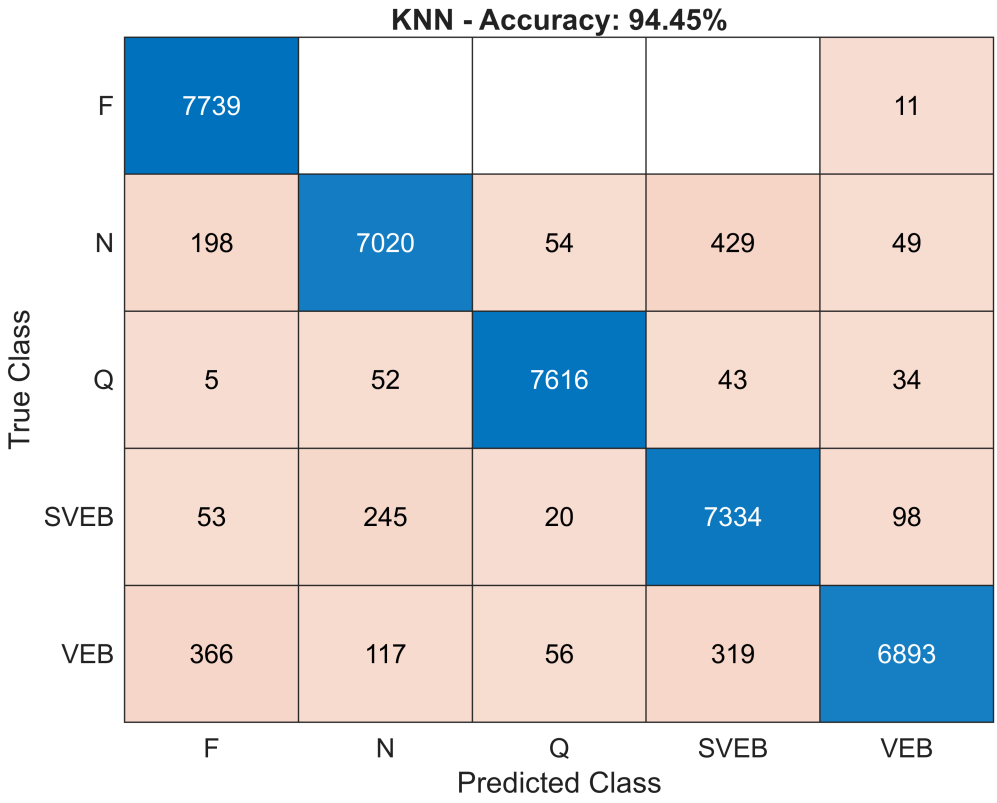
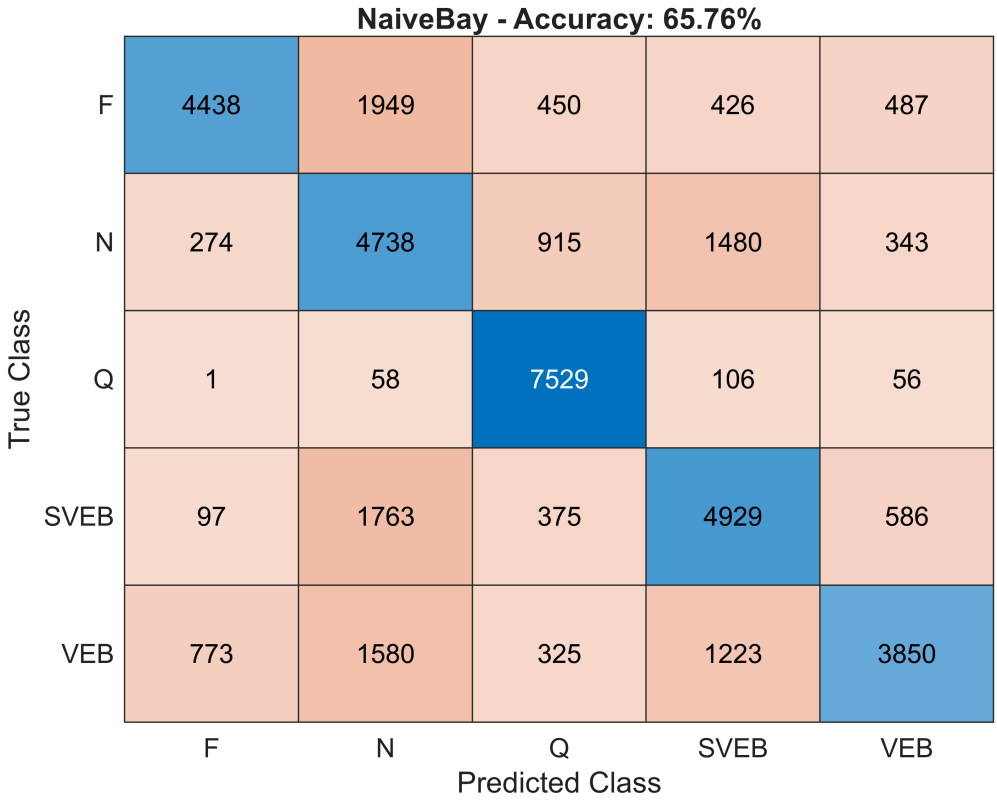
Model Accuracy

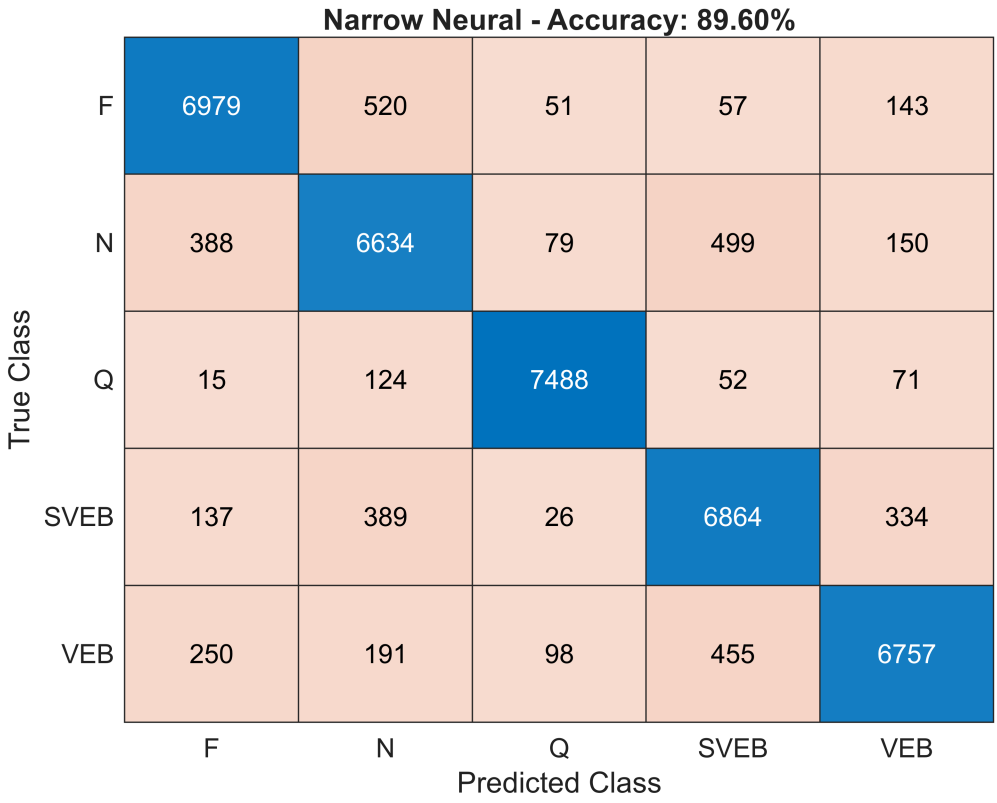
```
% List of trained models and their names
models = {trainedModel, trainedModel1, trainedModel2, trainedModel3,
trainedModel4, ...
          trainedModel5, trainedModel6, trainedModel7, trainedModel8,
trainedModelkfold, trainedModelkfold1, trainedModelkfold2};
modelNames = {'Tree', 'Random Forest', 'KNN', 'NaiveBay', ...
              'Narrow Neural', 'Medium Neural', 'Wide Neural', 'Bilayered
Neural', 'Trilayered Neural', 'K-Fold Tree', 'K-Fold NaiveBay', 'K-Fold Random
Forest'};

% Preallocate accuracy array
accuracies = zeros(length(models), 1);

% Y_test is a column categorical array
Y_test_cat = categorical(Y_test(:));

% Loop through models
for i = 1:length(models)
    model = models{i};
    modelName = modelNames{i};

    % Converting X_test to table with correct variable names
    X_test_table = array2table(X_test, 'VariableNames', model.RequiredVariables);

    % Prediction
    predictions = categorical(model.predictFcn(X_test_table(:,:)));

    % Accuracy
    acc = mean(predictions == Y_test_cat) * 100;
    accuracies(i) = acc;

    % Confusion matrix
    figure;
    cm = confusionchart(Y_test_cat, predictions);
    cm.Title = sprintf('%s - Accuracy: %.2f%%', modelName, acc);

end
```

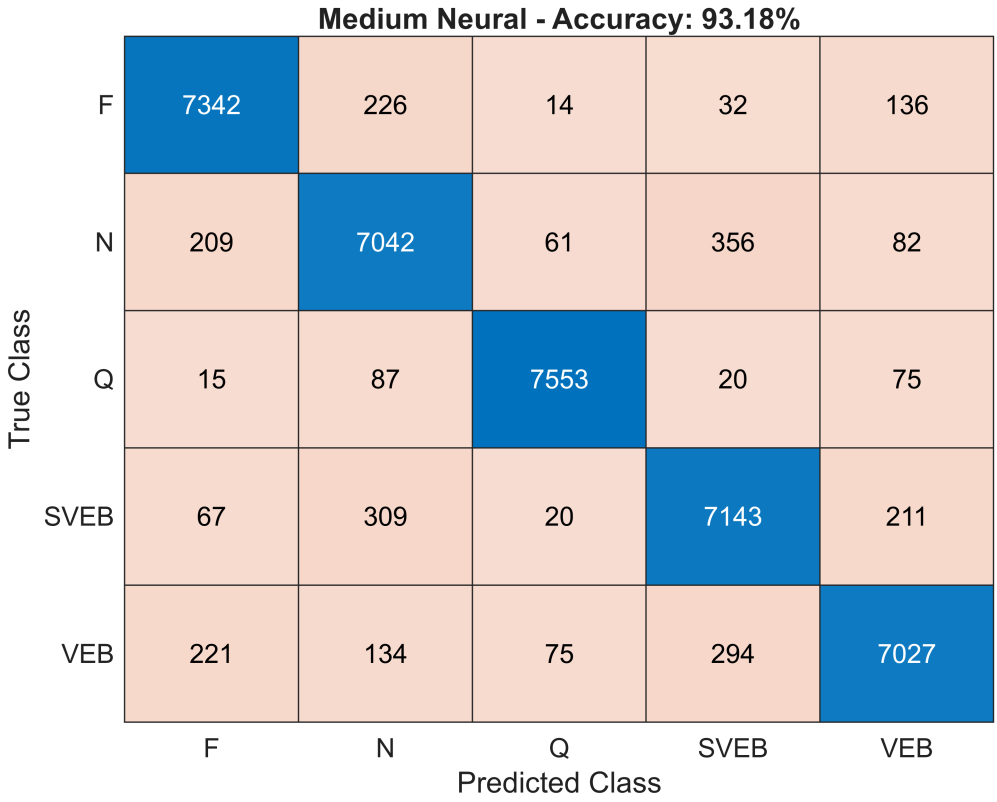

Tree - Accuracy: 84.73%
True Class
F
N
Q
SVEB
VEB
6497
933
43
277
746
6219
53
329
403
81
194
7337
43
95
274
626
5
6423
422
418
391
62
521
6359
F
N
Q
SVEB
VEB
Predicted Class

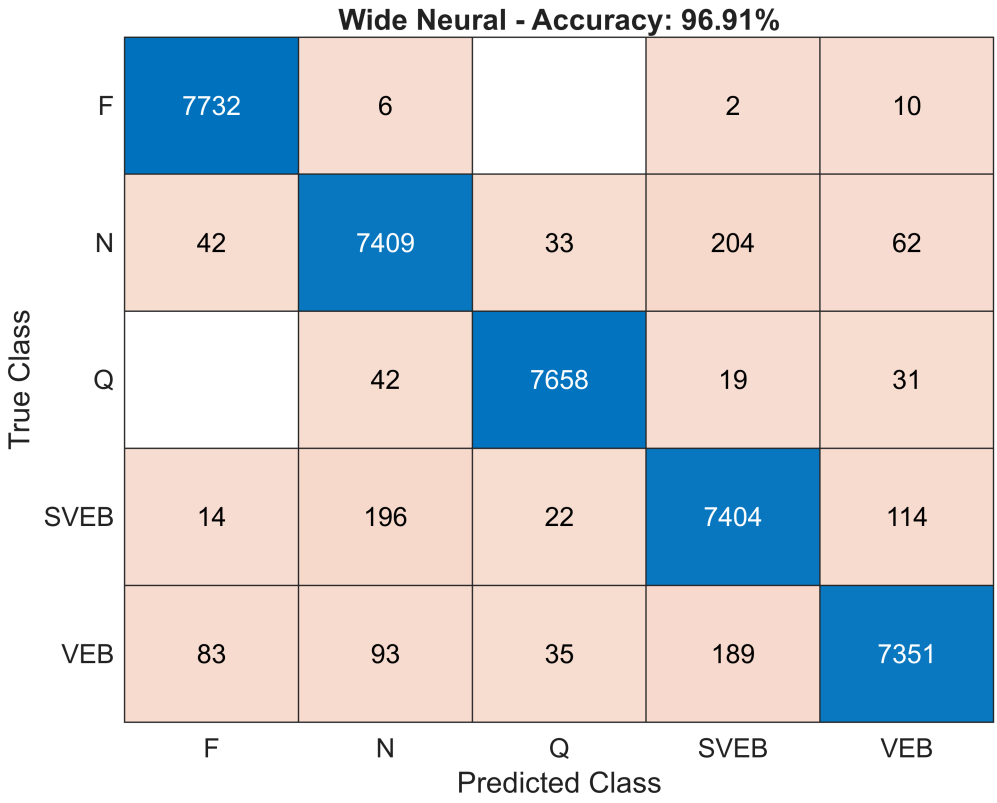

Random Forest - Accuracy: 97.71%
True Class
F
N
Q
SVEB
VEB
7721
11
18
19
7480
7
180
64
2
66
7651
4
27
1
113
9
7534
93
51
81
6
137
7476
F
N
Q
SVEB
VEB
Predicted Class

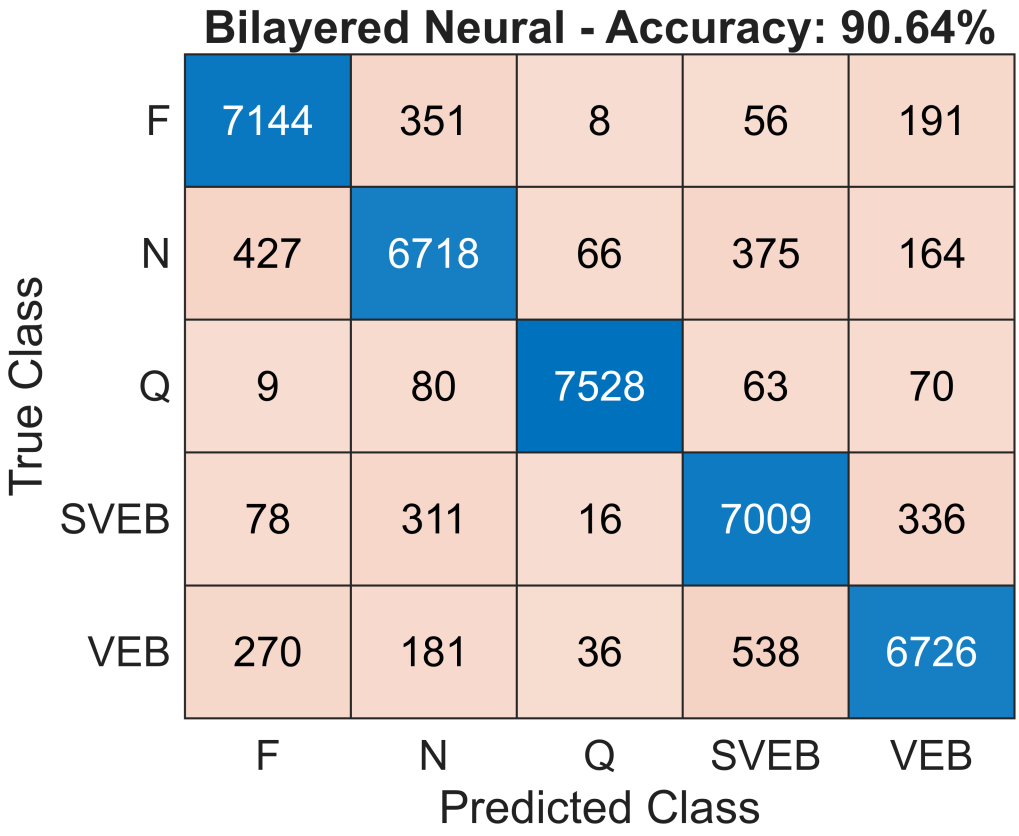

KNN - Accuracy: 94.45%
True Class
F
N
Q
SVEB
VEB
7739
11
198
7020
54
429
49
5
52
7616
43
34
53
245
20
7334
98
366
117
56
319
6893
F
N
Q
SVEB
VEB
Predicted Class

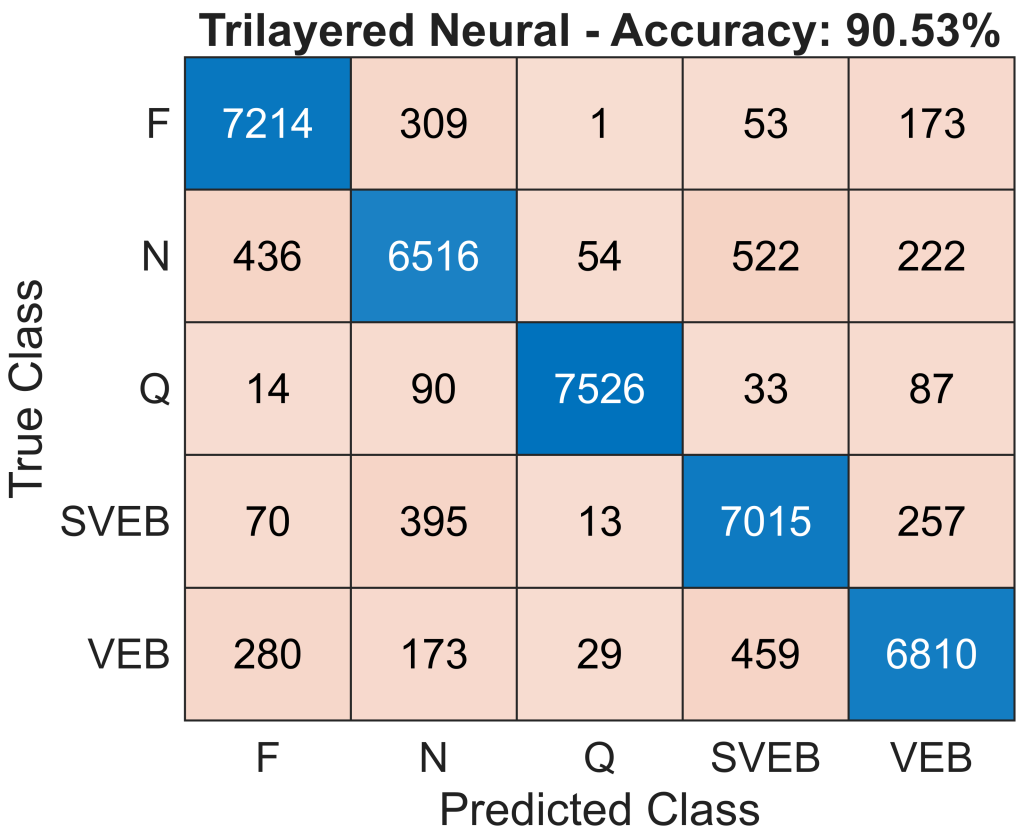

NaiveBay - Accuracy: 65.76%
True Class
F
N
Q
SVEB
VEB
4438
1949
450
426
487
274
4738
915
1480
343
1
58
7529
106
56
97
1763
375
4929
586
773
1580
325
1223
3850
F
N
Q
SVEB
VEB
Predicted Class

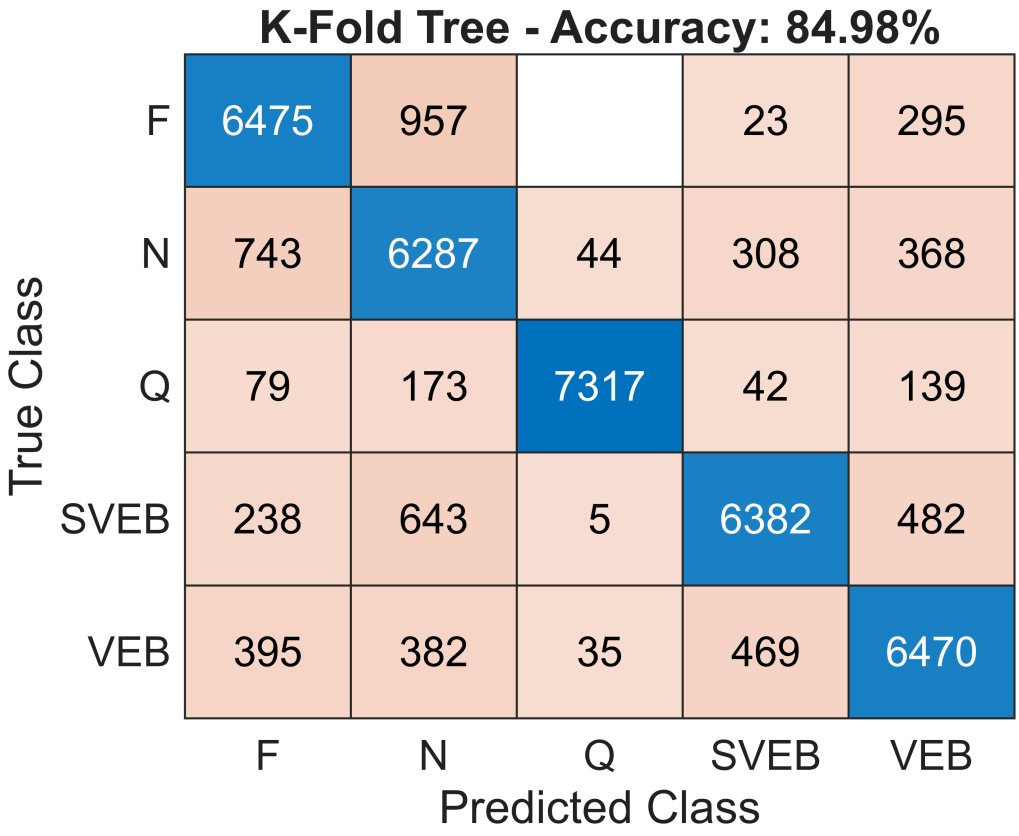

Narrow Neural - Accuracy: 89.60%
True Class
F
N
Q
SVEB
VEB
6979
520
51
57
143
388
6634
79
499
150
15
124
7488
52
71
137
389
26
6864
334
250
191
98
455
6757
F
N
Q
SVEB
VEB
Predicted Class

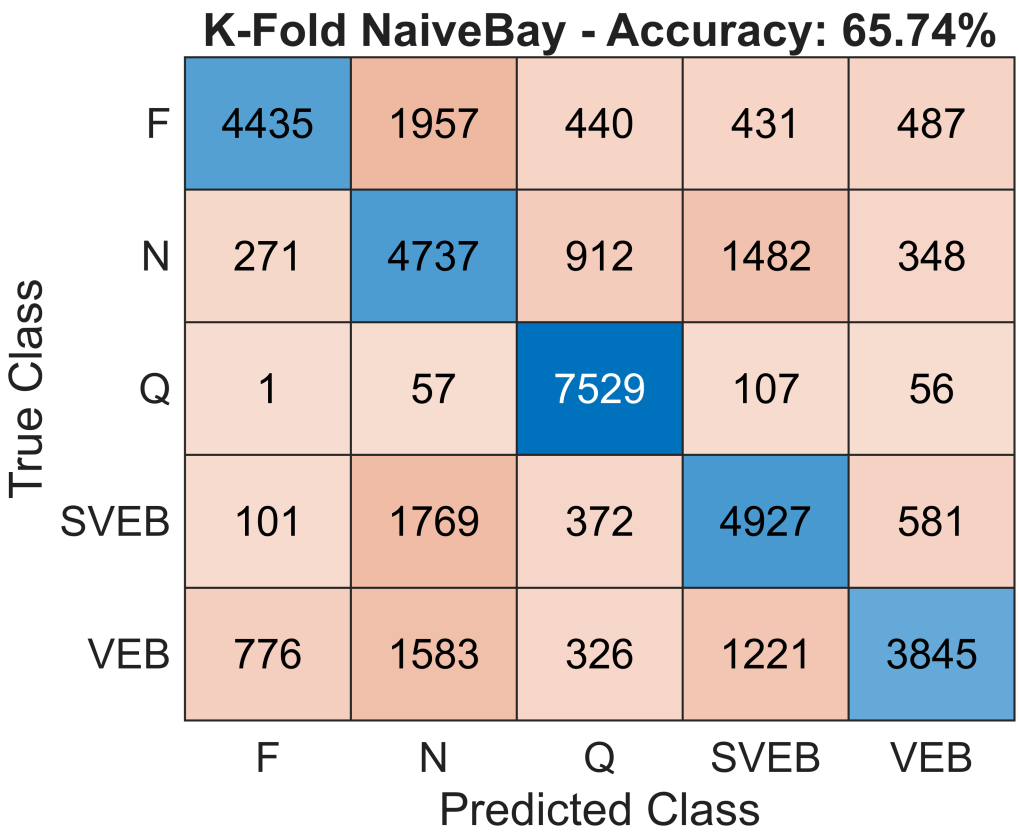

Medium Neural - Accuracy: 93.18%
True Class
F
N
Q
SVEB
VEB
7342
226
14
32
136
209
7042
61
356
82
15
87
7553
20
75
67
309
20
7143
211
221
134
75
294
7027
F
N
Q
SVEB
VEB
Predicted Class

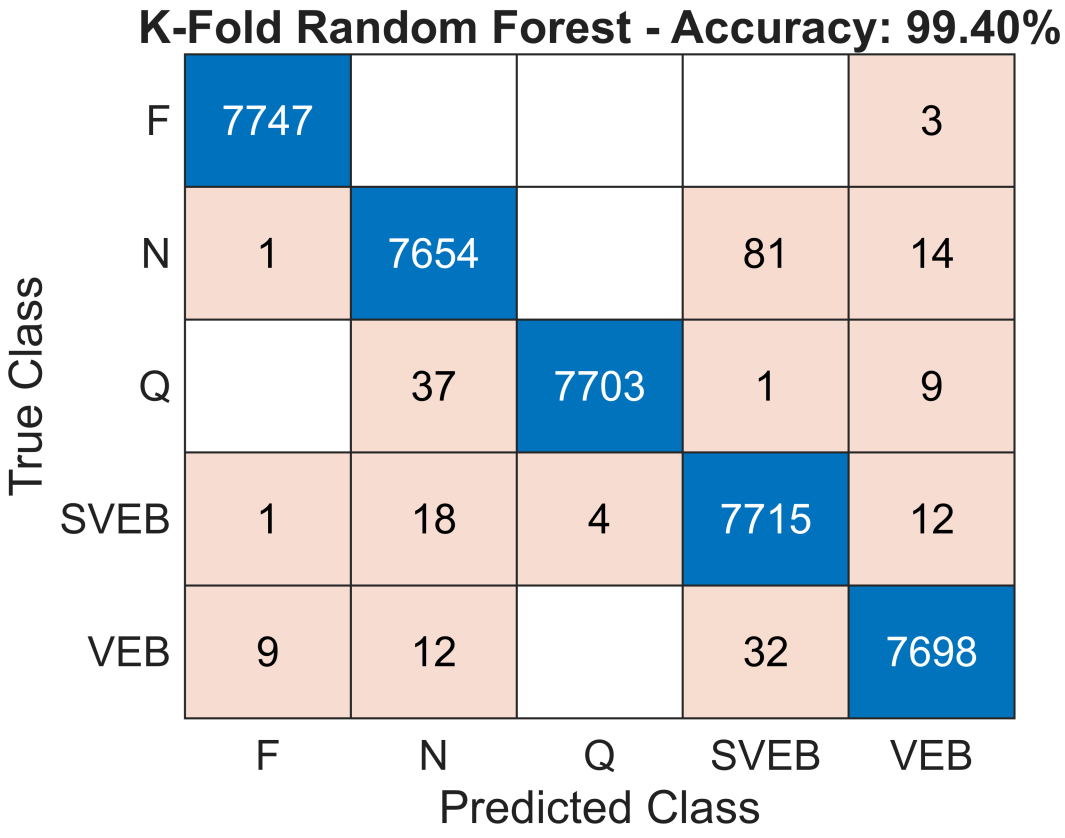

Wide Neural - Accuracy: 96.91%
F
N
Q
SVEB
VEB
True Class
7732
6
2
10
42
7409
33
204
62
42
7658
19
31
14
196
22
7404
114
83
93
35
189
7351
F
N
Q
SVEB
VEB
Predicted Class


Bilayered Neural - Accuracy: 90.64%
F
N
Q
SVEB
VEB
True Class
7144
351
8
56
191
427
6718
66
375
164
9
80
7528
63
70
78
311
16
7009
336
270
181
36
538
6726
F
N
Q
SVEB
VEB
Predicted Class


Trilayered Neural - Accuracy: 90.53%
True Class
F
N
Q
SVEB
VEB
7214
309
1
53
173
436
6516
54
522
222
14
90
7526
33
87
70
395
13
7015
257
280
173
29
459
6810
F
N
Q
SVEB
VEB
Predicted Class


K-Fold Tree - Accuracy: 84.98%
True Class
F
N
Q
SVEB
VEB
6475
957
23
295
743
6287
44
308
368
79
173
7317
42
139
238
643
5
6382
482
395
382
35
469
6470
F
N
Q
SVEB
VEB
Predicted Class






```
% Summary table of accuracies
resultTable = table(modelNames', accuracies, 'VariableNames', {'Model',
'Accuracy'});
disp(resultTable);
```

Model	Accuracy
{'Tree' }	84.733
{'Random Forest' }	97.706
{'KNN' }	94.454
{'NaiveBay' }	65.763
{'Narrow Neural' }	89.603
{'Medium Neural' }	93.177
{'Wide Neural' }	96.911
{'Bilayered Neural' }	90.643
{'Trilayered Neural' }	90.529
{'K-Fold Tree' }	84.981
{'K-Fold NaiveBay' }	65.735
{'K-Fold Random Forest'}	99.396