**Time - Frequency Domain – Alpha – Arousal**

**NaiveBayes classifier**

**- Filter:** Partition membership (Random Tree)

Correctly Classified Instances 809 63.2031 %

Incorrectly Classified Instances 471 36.7969 %

Kappa statistic 0.2583

Mean absolute error 0.3675

Root mean squared error 0.5743

Relative absolute error 74.5995 %

Root relative squared error 115.7266 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,646 0,386 0,681 0,646 0,663 0,259 0,678 0,710 1

0,614 0,354 0,576 0,614 0,594 0,259 0,678 0,583 0

Weighted Avg. 0,632 0,372 0,635 0,632 0,633 0,259 0,678 0,654

=== Confusion Matrix ===

a b <-- classified as

464 254 | a = 1

217 345 | b = 0

**SVM(SMO) Classifier**

**- Filter:** Partition membership (Random Tree)

**- Classifier:** SMO(Sequential minimal optimization)

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1224 95.625 %

Incorrectly Classified Instances 56 4.375 %

Kappa statistic 0.9111

Mean absolute error 0.0437

Root mean squared error 0.2092

Relative absolute error 8.8817 %

Root relative squared error 42.147 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,964 0,053 0,958 0,964 0,961 0,911 0,955 0,944 1

0,947 0,036 0,953 0,947 0,950 0,911 0,955 0,926 0

Weighted Avg. 0,956 0,046 0,956 0,956 0,956 0,911 0,955 0,936

=== Confusion Matrix ===

a b <-- classified as

692 26 | a = 1

30 532 | b = 0

**İBK Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1205 94.1406 %

Incorrectly Classified Instances 75 5.8594 %

Kappa statistic 0.8808

Mean absolute error 0.0577

Root mean squared error 0.2381

Relative absolute error 11.7066 %

Root relative squared error 47.9734 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,954 0,075 0,942 0,954 0,948 0,881 0,965 0,961 1

0,925 0,046 0,940 0,925 0,933 0,881 0,965 0,944 0

Weighted Avg. 0,941 0,062 0,941 0,941 0,941 0,881 0,965 0,954

=== Confusion Matrix ===

a b <-- classified as

685 33 | a = 1

42 520 | b = 0

**RandomForest Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1209 94.4531 %

Incorrectly Classified Instances 71 5.5469 %

Kappa statistic 0.8871

Mean absolute error 0.076

Root mean squared error 0.1967

Relative absolute error 15.4366 %

Root relative squared error 39.6303 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,958 0,073 0,944 0,958 0,951 0,887 0,990 0,992 1

0,927 0,042 0,946 0,927 0,936 0,887 0,990 0,988 0

Weighted Avg. 0,945 0,059 0,945 0,945 0,944 0,887 0,990 0,990

=== Confusion Matrix ===

a b <-- classified as

688 30 | a = 1

41 521 | b = 0

**Frequency Domain – Beta – Dominance**

**NaiveBayes classifier**

**- Filter:** Partition membership (Random Tree)

Correctly Classified Instances 811 63.3594 %

Incorrectly Classified Instances 469 36.6406 %

Kappa statistic 0.2589

Mean absolute error 0.3649

Root mean squared error 0.555

Relative absolute error 74.0809 %

Root relative squared error 111.8361 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,660 0,400 0,678 0,660 0,669 0,259 0,695 0,721 1

0,600 0,340 0,580 0,600 0,590 0,259 0,695 0,645 0

Weighted Avg. 0,634 0,374 0,635 0,634 0,634 0,259 0,695 0,688

=== Confusion Matrix ===

a b <-- classified as

474 244 | a = 1

225 337 | b = 0

**SVM(SMO) Classifier**

**- Filter:** Partition membership (Random Tree)

**- Classifier:** SMO(Sequential minimal optimization)

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1219 95.2344 %

Incorrectly Classified Instances 61 4.7656 %

Kappa statistic 0.9026

Mean absolute error 0.0477

Root mean squared error 0.2183

Relative absolute error 9.6747 %

Root relative squared error 43.9883 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,981 0,084 0,937 0,981 0,958 0,904 0,948 0,930 1

0,916 0,019 0,974 0,916 0,944 0,904 0,948 0,929 0

Weighted Avg. 0,952 0,055 0,953 0,952 0,952 0,904 0,948 0,930

=== Confusion Matrix ===

a b <-- classified as

704 14 | a = 1

47 515 | b = 0

**İBK Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1193 93.2031 %

Incorrectly Classified Instances 87 6.7969 %

Kappa statistic 0.8619

Mean absolute error 0.0673

Root mean squared error 0.2561

Relative absolute error 13.6568 %

Root relative squared error 51.6016 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,943 0,082 0,936 0,943 0,940 0,862 0,959 0,955 1

0,918 0,057 0,926 0,918 0,922 0,862 0,959 0,942 0

Weighted Avg. 0,932 0,071 0,932 0,932 0,932 0,862 0,959 0,949

=== Confusion Matrix ===

a b <-- classified as

677 41 | a = 1

46 516 | b = 0

**RandomForest Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1197 93.5156 %

Incorrectly Classified Instances 83 6.4844 %

Kappa statistic 0.8681

Mean absolute error 0.0852

Root mean squared error 0.208

Relative absolute error 17.3002 %

Root relative squared error 41.9223 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,950 0,084 0,936 0,950 0,943 0,868 0,989 0,992 1

0,916 0,050 0,935 0,916 0,925 0,868 0,989 0,985 0

Weighted Avg. 0,935 0,069 0,935 0,935 0,935 0,868 0,989 0,989

=== Confusion Matrix ===

a b <-- classified as

682 36 | a = 1

47 515 | b = 0

**Time-Frequency Domain – Gamma – Arousal**

**NaiveBayes classifier**

**- Filter:** Partition membership (Random Tree)

Correctly Classified Instances 806 62.9688 %

Incorrectly Classified Instances 474 37.0313 %

Kappa statistic 0.2502

Mean absolute error 0.3846

Root mean squared error 0.562

Relative absolute error 78.077 %

Root relative squared error 113.2499 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,660 0,409 0,673 0,660 0,667 0,250 0,674 0,703 1

0,591 0,340 0,576 0,591 0,583 0,250 0,674 0,612 0

Weighted Avg. 0,630 0,379 0,631 0,630 0,630 0,250 0,674 0,663

=== Confusion Matrix ===

a b <-- classified as

474 244 | a = 1

230 332 | b = 0

**SVM(SMO) Classifier**

**- Filter:** Partition membership (Random Tree)

**- Classifier:** SMO(Sequential minimal optimization)

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1240 96.875 %

Incorrectly Classified Instances 40 3.125 %

Kappa statistic 0.9361

Mean absolute error 0.0313

Root mean squared error 0.1768

Relative absolute error 6.344 %

Root relative squared error 35.6207 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

1,000 0,071 0,947 1,000 0,973 0,938 0,964 0,947 1

0,929 0,000 1,000 0,929 0,963 0,938 0,964 0,960 0

Weighted Avg. 0,969 0,040 0,970 0,969 0,969 0,938 0,964 0,953

=== Confusion Matrix ===

a b <-- classified as

718 0 | a = 1

40 522 | b = 0

**İBK Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1210 94.5313 %

Incorrectly Classified Instances 70 5.4688 %

Kappa statistic 0.8888

Mean absolute error 0.0541

Root mean squared error 0.2311

Relative absolute error 10.991 %

Root relative squared error 46.56 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,957 0,069 0,946 0,957 0,952 0,889 0,963 0,963 1

0,931 0,043 0,944 0,931 0,937 0,889 0,963 0,939 0

Weighted Avg. 0,945 0,058 0,945 0,945 0,945 0,889 0,963 0,953

=== Confusion Matrix ===

a b <-- classified as

687 31 | a = 1

39 523 | b = 0

**RandomForest Classifier**

- **Filter:** Partition membership (Random Tree)

Correctly Classified Instances 1216 95 %

Incorrectly Classified Instances 64 5 %

Kappa statistic 0.8983

Mean absolute error 0.0716

Root mean squared error 0.1911

Relative absolute error 14.531 %

Root relative squared error 38.5105 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0,962 0,066 0,949 0,962 0,956 0,898 0,992 0,993 1

0,934 0,038 0,951 0,934 0,943 0,898 0,992 0,990 0

Weighted Avg. 0,950 0,053 0,950 0,950 0,950 0,898 0,992 0,992

=== Confusion Matrix ===

a b <-- classified as

691 27 | a = 1

37 525 | b = 0