**Frequency Domain – Alpha – Arousal**

**NaiveBayes classifier**

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

Correctly Classified Instances 853 66.6406 %

Incorrectly Classified Instances 427 33.3594 %

Kappa statistic 0.3124

Mean absolute error 0.3306

Root mean squared error 0.5288

Relative absolute error 68.3532 %

Root relative squared error 107.5485 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,710 0,397 0,721 0,710 0,716 0,312 0,727 0,773 1

0,603 0,290 0,591 0,603 0,597 0,312 0,727 0,621 0

Weighted Avg. 0,666 0,353 0,668 0,666 0,667 0,312 0,727 0,711

=== Confusion Matrix ===

a b <-- classified as

537 219 | a = 1

208 316 | b = 0

**SVM(SMO) Classifier**

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

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

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1252 97.8125 %

Incorrectly Classified Instances 28 2.1875 %

Kappa statistic 0.9551

Mean absolute error 0.0219

Root mean squared error 0.1479

Relative absolute error 4.5233 %

Root relative squared error 30.0784 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,963 0,000 1,000 0,963 0,981 0,956 0,981 0,985 1

1,000 0,037 0,949 1,000 0,974 0,956 0,981 0,949 0

Weighted Avg. 0,978 0,015 0,979 0,978 0,978 0,956 0,981 0,970

=== Confusion Matrix ===

a b <-- classified as

728 28 | a = 1

0 524 | b = 0

**İBK Classifier**

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

Correctly Classified Instances 1220 95.3125 %

Incorrectly Classified Instances 60 4.6875 %

Kappa statistic 0.903

Mean absolute error 0.0463

Root mean squared error 0.2133

Relative absolute error 9.5715 %

Root relative squared error 43.3875 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,963 0,061 0,958 0,963 0,960 0,903 0,977 0,982 1

0,939 0,037 0,946 0,939 0,943 0,903 0,977 0,962 0

Weighted Avg. 0,953 0,051 0,953 0,953 0,953 0,903 0,977 0,974

=== Confusion Matrix ===

a b <-- classified as

728 28 | a = 1

32 492 | b = 0

**RandomForest Classifier**

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

Correctly Classified Instances 1222 95.4688 %

Incorrectly Classified Instances 58 4.5313 %

Kappa statistic 0.9062

Mean absolute error 0.0646

Root mean squared error 0.1782

Relative absolute error 13.3615 %

Root relative squared error 36.243 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,963 0,057 0,960 0,963 0,962 0,906 0,993 0,996 1

0,943 0,037 0,946 0,943 0,945 0,906 0,993 0,989 0

Weighted Avg. 0,955 0,049 0,955 0,955 0,955 0,906 0,993 0,993

=== Confusion Matrix ===

a b <-- classified as

728 28 | a = 1

30 494 | b = 0

**Frequency Domain – Beta – Dominance**

**NaiveBayes classifier**

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

Correctly Classified Instances 865 67.5781 %

Incorrectly Classified Instances 415 32.4219 %

Kappa statistic 0.3506

Mean absolute error 0.3309

Root mean squared error 0.5351

Relative absolute error 68.4291 %

Root relative squared error 108.8189 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,652 0,290 0,764 0,652 0,704 0,356 0,731 0,782 1

0,710 0,348 0,586 0,710 0,642 0,356 0,731 0,660 0

Weighted Avg. 0,676 0,314 0,691 0,676 0,678 0,356 0,731 0,732

=== Confusion Matrix ===

a b <-- classified as

493 263 | a = 1

152 372 | b = 0

**SVM(SMO) Classifier**

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

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

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1242 97.0313 %

Incorrectly Classified Instances 38 2.9688 %

Kappa statistic 0.9379

Mean absolute error 0.0297

Root mean squared error 0.1723

Relative absolute error 6.1388 %

Root relative squared error 35.0402 %

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 0,073 0,952 1,000 0,975 0,940 0,964 0,952 1

0,927 0,000 1,000 0,927 0,962 0,940 0,964 0,957 0

Weighted Avg. 0,970 0,043 0,972 0,970 0,970 0,940 0,964 0,954

=== Confusion Matrix ===

a b <-- classified as

756 0 | a = 1

38 486 | b = 0

**İBK Classifier**

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

Correctly Classified Instances 1197 93.5156 %

Incorrectly Classified Instances 83 6.4844 %

Kappa statistic 0.8662

Mean absolute error 0.0643

Root mean squared error 0.2511

Relative absolute error 13.2858 %

Root relative squared error 51.0716 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,940 0,073 0,949 0,940 0,945 0,866 0,965 0,972 1

0,927 0,060 0,915 0,927 0,921 0,866 0,965 0,936 0

Weighted Avg. 0,935 0,067 0,935 0,935 0,935 0,866 0,965 0,958

=== Confusion Matrix ===

a b <-- classified as

711 45 | a = 1

38 486 | b = 0

**RandomForest Classifier**

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

Correctly Classified Instances 1203 93.9844 %

Incorrectly Classified Instances 77 6.0156 %

Kappa statistic 0.8757

Mean absolute error 0.0728

Root mean squared error 0.1987

Relative absolute error 15.0449 %

Root relative squared error 40.4093 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,947 0,071 0,951 0,947 0,949 0,876 0,991 0,994 1

0,929 0,053 0,924 0,929 0,927 0,876 0,991 0,988 0

Weighted Avg. 0,940 0,063 0,940 0,940 0,940 0,876 0,991 0,991

=== Confusion Matrix ===

a b <-- classified as

716 40 | a = 1

37 487 | b = 0

**Frequency Domain – Gamma – Dominance**

**NaiveBayes classifier**

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

Correctly Classified Instances 867 67.7344 %

Incorrectly Classified Instances 413 32.2656 %

Kappa statistic 0.3497

Mean absolute error 0.3232

Root mean squared error 0.539

Relative absolute error 66.8253 %

Root relative squared error 109.6054 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,668 0,309 0,757 0,668 0,710 0,353 0,724 0,786 1

0,691 0,332 0,591 0,691 0,637 0,353 0,724 0,630 0

Weighted Avg. 0,677 0,319 0,689 0,677 0,680 0,353 0,724 0,722

=== Confusion Matrix ===

a b <-- classified as

505 251 | a = 1

162 362 | b = 0

**SVM(SMO) Classifier**

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

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

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1254 97.9688 %

Incorrectly Classified Instances 26 2.0313 %

Kappa statistic 0.9583

Mean absolute error 0.0203

Root mean squared error 0.1425

Relative absolute error 4.2002 %

Root relative squared error 28.9842 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,966 0,000 1,000 0,966 0,983 0,959 0,983 0,986 1

1,000 0,034 0,953 1,000 0,976 0,959 0,983 0,953 0

Weighted Avg. 0,980 0,014 0,981 0,980 0,980 0,959 0,983 0,972

=== Confusion Matrix ===

a b <-- classified as

730 26 | a = 1

0 524 | b = 0

**İBK Classifier**

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

Correctly Classified Instances 1225 95.7031 %

Incorrectly Classified Instances 55 4.2969 %

Kappa statistic 0.9111

Mean absolute error 0.0427

Root mean squared error 0.2052

Relative absolute error 8.8278 %

Root relative squared error 41.7388 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,966 0,055 0,962 0,966 0,964 0,911 0,978 0,981 1

0,945 0,034 0,950 0,945 0,947 0,911 0,978 0,962 0

Weighted Avg. 0,957 0,047 0,957 0,957 0,957 0,911 0,978 0,973

=== Confusion Matrix ===

a b <-- classified as

730 26 | a = 1

29 495 | b = 0

**RandomForest Classifier**

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

Correctly Classified Instances 1228 95.9375 %

Incorrectly Classified Instances 52 4.0625 %

Kappa statistic 0.916

Mean absolute error 0.0581

Root mean squared error 0.1731

Relative absolute error 12.0062 %

Root relative squared error 35.208 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,966 0,050 0,966 0,966 0,966 0,916 0,993 0,996 1

0,950 0,034 0,950 0,950 0,950 0,916 0,993 0,989 0

Weighted Avg. 0,959 0,043 0,959 0,959 0,959 0,916 0,993 0,993

=== Confusion Matrix ===

a b <-- classified as

730 26 | a = 1

26 498 | b = 0