**Frequency Domain – Alpha – Arousal**

**NaiveBayes classifier**

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

Correctly Classified Instances 850 66.4063 %

Incorrectly Classified Instances 430 33.5938 %

Kappa statistic 0.3217

Mean absolute error 0.3383

Root mean squared error 0.534

Relative absolute error 68.6812 %

Root relative squared error 107.5924 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,681 0,358 0,709 0,681 0,695 0,322 0,726 0,774 1

0,642 0,319 0,612 0,642 0,627 0,322 0,726 0,639 0

Weighted Avg. 0,664 0,341 0,666 0,664 0,665 0,322 0,726 0,715

=== Confusion Matrix ===

a b <-- classified as

489 229 | a = 1

201 361 | b = 0

**SVM(SMO) Classifier**

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

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

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1248 97.5 %

Incorrectly Classified Instances 32 2.5 %

Kappa statistic 0.9495

Mean absolute error 0.025

Root mean squared error 0.1581

Relative absolute error 5.0752 %

Root relative squared error 31.8601 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,961 0,007 0,994 0,961 0,977 0,950 0,977 0,977 1

0,993 0,039 0,952 0,993 0,972 0,950 0,977 0,949 0

Weighted Avg. 0,975 0,021 0,976 0,975 0,975 0,950 0,977 0,965

=== Confusion Matrix ===

a b <-- classified as

690 28 | a = 1

4 558 | b = 0

**İBK Classifier**

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

Correctly Classified Instances 1224 95.625 %

Incorrectly Classified Instances 56 4.375 %

Kappa statistic 0.9112

Mean absolute error 0.0438

Root mean squared error 0.2071

Relative absolute error 8.8848 %

Root relative squared error 41.7378 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,960 0,048 0,962 0,960 0,961 0,911 0,974 0,973 1

0,952 0,040 0,949 0,952 0,950 0,911 0,974 0,958 0

Weighted Avg. 0,956 0,045 0,956 0,956 0,956 0,911 0,974 0,966

=== Confusion Matrix ===

a b <-- classified as

689 29 | a = 1

27 535 | b = 0

**RandomForest Classifier**

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

Correctly Classified Instances 1230 96.0938 %

Incorrectly Classified Instances 50 3.9063 %

Kappa statistic 0.9208

Mean absolute error 0.0602

Root mean squared error 0.1698

Relative absolute error 12.2281 %

Root relative squared error 34.2211 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,961 0,039 0,969 0,961 0,965 0,921 0,995 0,996 1

0,961 0,039 0,951 0,961 0,956 0,921 0,995 0,993 0

Weighted Avg. 0,961 0,039 0,961 0,961 0,961 0,921 0,995 0,995

=== Confusion Matrix ===

a b <-- classified as

690 28 | a = 1

22 540 | b = 0

**Frequency Domain – Beta – Arousal**

**NaiveBayes classifier**

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

Correctly Classified Instances 840 65.625 %

Incorrectly Classified Instances 440 34.375 %

Kappa statistic 0.3146

Mean absolute error 0.3582

Root mean squared error 0.5591

Relative absolute error 72.7133 %

Root relative squared error 112.6593 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,628 0,308 0,723 0,628 0,672 0,318 0,692 0,727 1

0,692 0,372 0,593 0,692 0,639 0,318 0,692 0,617 0

Weighted Avg. 0,656 0,336 0,666 0,656 0,657 0,318 0,692 0,679

=== Confusion Matrix ===

a b <-- classified as

451 267 | a = 1

173 389 | 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 0.9398

Mean absolute error 0.0297

Root mean squared error 0.1723

Relative absolute error 6.0268 %

Root relative squared error 34.7188 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,972 0,032 0,975 0,972 0,974 0,940 0,970 0,963 1

0,968 0,028 0,965 0,968 0,966 0,940 0,970 0,948 0

Weighted Avg. 0,970 0,030 0,970 0,970 0,970 0,940 0,970 0,956

=== Confusion Matrix ===

a b <-- classified as

698 20 | a = 1

18 544 | b = 0

**İBK Classifier**

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

Correctly Classified Instances 1227 95.8594 %

Incorrectly Classified Instances 53 4.1406 %

Kappa statistic 0.916

Mean absolute error 0.0423

Root mean squared error 0.2041

Relative absolute error 8.5873 %

Root relative squared error 41.1195 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,960 0,043 0,966 0,960 0,963 0,916 0,972 0,973 1

0,957 0,040 0,949 0,957 0,953 0,916 0,972 0,958 0

Weighted Avg. 0,959 0,042 0,959 0,959 0,959 0,916 0,972 0,966

=== Confusion Matrix ===

a b <-- classified as

689 29 | a = 1

24 538 | b = 0

**RandomForest Classifier**

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

Correctly Classified Instances 1231 96.1719 %

Incorrectly Classified Instances 49 3.8281 %

Kappa statistic 0.9224

Mean absolute error 0.0563

Root mean squared error 0.1671

Relative absolute error 11.4304 %

Root relative squared error 33.6612 %

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 0,039 0,969 0,962 0,966 0,922 0,995 0,996 1

0,961 0,038 0,952 0,961 0,957 0,922 0,995 0,994 0

Weighted Avg. 0,962 0,038 0,962 0,962 0,962 0,922 0,995 0,995

=== Confusion Matrix ===

a b <-- classified as

691 27 | a = 1

22 540 | b = 0

**Frequency Domain – Gamma – Dominance**

**NaiveBayes classifier**

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

Correctly Classified Instances 853 66.6406 %

Incorrectly Classified Instances 427 33.3594 %

Kappa statistic 0.3149

Mean absolute error 0.3382

Root mean squared error 0.5401

Relative absolute error 68.6591 %

Root relative squared error 108.8293 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,744 0,432 0,687 0,744 0,714 0,316 0,714 0,724 1

0,568 0,256 0,634 0,568 0,599 0,316 0,714 0,653 0

Weighted Avg. 0,666 0,355 0,664 0,666 0,664 0,316 0,714 0,693

=== Confusion Matrix ===

a b <-- classified as

534 184 | a = 1

243 319 | b = 0

**SVM(SMO) Classifier**

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

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

- **FilterType**: Standardize training data

- **Kernel:** PUK

Correctly Classified Instances 1251 97.7344 %

Incorrectly Classified Instances 29 2.2656 %

Kappa statistic 0.9537

Mean absolute error 0.0227

Root mean squared error 0.1505

Relative absolute error 4.5994 %

Root relative squared error 30.3299 %

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 0,052 0,961 1,000 0,980 0,955 0,974 0,961 1

0,948 0,000 1,000 0,948 0,974 0,955 0,974 0,971 0

Weighted Avg. 0,977 0,029 0,978 0,977 0,977 0,955 0,974 0,966

=== Confusion Matrix ===

a b <-- classified as

718 0 | a = 1

29 533 | b = 0

**İBK Classifier**

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

Correctly Classified Instances 1215 94.9219 %

Incorrectly Classified Instances 65 5.0781 %

Kappa statistic 0.8971

Mean absolute error 0.0503

Root mean squared error 0.222

Relative absolute error 10.2058 %

Root relative squared error 44.7428 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,948 0,050 0,961 0,948 0,954 0,897 0,973 0,977 1

0,950 0,052 0,935 0,950 0,943 0,897 0,973 0,957 0

Weighted Avg. 0,949 0,051 0,949 0,949 0,949 0,897 0,973 0,968

=== Confusion Matrix ===

a b <-- classified as

681 37 | a = 1

28 534 | b = 0

**RandomForest Classifier**

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

Correctly Classified Instances 1220 95.3125 %

Incorrectly Classified Instances 60 4.6875 %

Kappa statistic 0.9049

Mean absolute error 0.0673

Root mean squared error 0.176

Relative absolute error 13.6555 %

Root relative squared error 35.4652 %

Total Number of Instances 1280

=== Detailed Accuracy By Class ===

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

0,955 0,050 0,961 0,955 0,958 0,905 0,994 0,995 1

0,950 0,045 0,943 0,950 0,947 0,905 0,994 0,993 0

Weighted Avg. 0,953 0,048 0,953 0,953 0,953 0,905 0,994 0,994

=== Confusion Matrix ===

a b <-- classified as

686 32 | a = 1

28 534 | b = 0