**Supplementary tables**

Table S1. Predictive performance of the single feature on the Xu dataset1.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Single feature | Dimension | Sn(%) | Sp(%) | Acc(%) | MCC |
| PCG | 30 | 85.87 | 95.92 | 91.00 | 0.8233 |
| PC | 30 | 86.06 | 94.94 | 90.53 | 0.8135 |
| ANBPB | 28 | 87.92 | 94.50 | 91.22 | 0.8256 |
| BPB | 28 | 86.48 | 96.81 | 91.68 | 0.8378 |
| DBPB | 26 | 98.15 | 98.22 | 98.20 | 0.9607 |
| Tng | 20 | 86.58 | 88.01 | 87.30 | 0.7458 |
| AAC | 20 | 84.19 | 98.17 | 91.22 | 0.8321 |
| PSDAAP | 13 | 94.45 | 96.81 | 95.61 | 0.9126 |
| PSTAAP | 12 | 97.66 | 100 | 98.84 | 0.9770 |

Table S2. Predictive performance of the single feature on the Xu dataset2.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Single feature | Dimension | Sn(%) | Sp(%) | Acc(%) | MCC |
| PCG | 30 | 99.09 | 100 | 99.53 | 0.9907 |
| PC | 30 | 99.07 | 100 | 99.53 | 0.9907 |
| ANBPB | 28 | 98.62 | 98.60 | 98.59 | 0.9718 |
| BPB | 28 | 99.08 | 99.06 | 99.06 | 0.9813 |
| DBPB | 26 | 99.06 | 99.53 | 99.30 | 0.9859 |
| Tng | 20 | 99.55 | 97.63 | 98.59 | 0.9720 |
| AAC | 20 | 99.54 | 100 | 99.77 | 0.9953 |
| PSDAAP | 13 | 99.07 | 99.53 | 99.30 | 0.9860 |
| PSTAAP | 12 | 99.07 | 99.53 | 99.30 | 0.9859 |

Table S3. Predictive performance of the single feature on the Xu dataset3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Single feature | Dimension | Sn(%) | Sp(%) | Acc(%) | MCC |
| PCG | 30 | 24.63 | 98.49 | 72.46 | 0.3692 |
| PC | 30 | 28.34 | 97.47 | 73.11 | 0.3809 |
| ANBPB | 28 | 51.14 | 93.44 | 78.52 | 0.5104 |
| BPB | 28 | 54.51 | 90.62 | 77.87 | 0.4949 |
| DBPB | 26 | 98.15 | 98.21 | 98.20 | 0.9610 |
| Tng | 20 | 24.56 | 96.96 | 71.48 | 0.3292 |
| AAC | 20 | 26.98 | 97.22 | 72.46 | 0.3597 |
| PSDAAP | 13 | 97.70 | 98.73 | 98.36 | 0.9642 |
| PSTAAP | 12 | 100 | 99.24 | 99.51 | 0.9894 |

Table S4. Predictive performance of the combination feature on the Xu dataset1.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Combined feature | Combination dimension | Sn(%) | Sp(%) | Acc(%) | MCC |
| PCG | 30 | 85.87 | 95.92 | 91.00 | 0.8233 |
| **PCG+PC** | **30+30** | **95.08** | **96.84** | **90.98** | **0.8250** |
| PCG+ANBPB | 30+28 | 92.36 | 96.77 | 94.68 | 0.8943 |
| **PCG+BPB** | **30+28** | **92.08** | **96.77** | **94.39** | **0.8993** |
| **PCG+ANBPB+BPB** | **30+28+28** | **90.25** | **95.90** | **93.07** | **0.8626** |
| PCG+ANBPB+DBPB | 30+28+26 | 93.46 | 96.82 | 95.14 | 0.9029 |
| PCG+ANBPB+DBPB+Tng | 30+28+26+20 | 95.40 | 97.22 | 96.30 | 0.9264 |
| **PCG+ANBPB+DBPB+AAC** | **30+28+26+20** | **91.61** | **96.70** | **94.22** | **0.8862** |
| PCG+ANBPB+DBPB+Tng+AAC | 30+28+26+20+20 | 96.38 | 99.56 | 97.92 | 0.9592 |
| **PCG+ANBPB+DBPB+Tng+AAC+PSDAAP** | **30+28+26+20+20+13** | **94.52** | **97.67** | **96.07** | **0.9219** |
| **PCG+ANBPB+DBPB+Tng+AAC+PSTAAP** | **30+28+26+20+20+12** | **96.30** | **99.05** | **97.69** | **0.9540** |

The bold value represents the result of being discarded

Table S5. Predictive performance of the combination feature on the Xu dataset2.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Combined feature | Combination dimension | Sn(%) | Sp(%) | Acc(%) | MCC |
| ANBPB | 28 | 98.58 | 98.54 | 98.59 | 0.9719 |
| ANBPB+ PSDAAP | 28+13 | 99.52 | 100 | 99.76 | 0.9953 |

Table S6. Predictive performance of the combination feature on the Xu dataset3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Combined feature | Combination dimension | Sn(%) | Sp(%) | Acc(%) | MCC |
| PCG | 30 | 24.63 | 98.49 | 72.46 | 0.3692 |
| PCG+PC | 30+30 | 27.71 | 97.72 | 73.11 | 0.3816 |
| **PCG+PC+ANBPB** | **30+30+28** | **51.15** | **93.57** | **78.69** | **0.5140** |
| PCG+PC+BPB | 30+30+28 | 63.04 | 94.12 | 83.28 | 0.6198 |
| **PCG+PC+BPB+ANBPB** | **30+30+28+28** | **51.14** | **93.64** | **78.69** | **0.5134** |
| PCG+PC+BPB+DBPB | 30+30+28+26 | 96.62 | 98.26 | 97.70 | 0.9485 |
| **PCG+PC+BPB+DBPB+AAC** | **30+30+28+26+20** | **96.45** | **98.70** | **97.87** | **0.9539** |
| **PCG+PC+BPB+DBPB+Tng** | **30+30+28+26+20** | **94.35** | **97.73** | **96.56** | **0.9238** |
| **PCG+PC+BPB+DBPB+ PSDAAP** | **30+30+28+26+13** | **96.89** | **98.23** | **97.70** | **0.9505** |
| PCG+PC+BPB+DBPB+ PSTAAP | 30+30+28+26+12 | 98.61 | 99.26 | 99.02 | 0.9784 |

The bold value represents the result of being discarded

Table S7. SVM parameters used in different datasets.

|  |  |
| --- | --- |
| Dataset name | SVM parameters |
| Xu dataset1 | -c 22.6274 -g 0.088388 |
| Xu dataset2 | -c 1 -g 1 |
| Xu dataset3 | -c 11.3137 -g 0.70711 |
| Johansen dataset1 | -c 0.5 -g 0.25 |
| Johansen dataset2 | -c 0.5 -g 0.125 |
| Johansen dataset3 | -c 1 -g 2 |