## Experiment 1

Features list:

1. Laws(9)
2. GLRLMS {mean of 4 angles} (11)
3. GLCM (20)
4. Hu moments (7)

Experiment features list:

1. 1 + 2 + 3 + 4
2. 1 + 2 + 3
3. 1 + 2 + 4
4. 1 + 3 + 4
5. 2 + 3 + 4

* No variables excluded; no PCA;
* Tumor slides resized to 100\*100 pixels
* 10-fold cross-validation
* No histogram equalization

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Trial** | **A – accuracy** | **A – best classifier** | **B – accuracy** | **B – best classifier** | **C – accuracy** | **C – best classifier** | **D – accuracy** | **D – best classifier** | **E – accuracy** | **E – best classifier** |
| 1 | 82.4% | Fine KNN | 84.9% | Fine KNN | 78.2% | Ensemble | 82.4% | Ensemble | 88.2% | Fine KNN |
| 2 | 80.7% | Cubic SVM | 82.4% | Fine KNN | 77.3% | Ensemble | 79.8% | Ensemble/ Fine KNN | 89.1% | Weighted KNN |
| 3 | 85.7% | Ensemble | 84.9% | Gaussian SVM | 84.0% | Ensemble | 83.2% | Fine KNN | 89.1% | Fine KNN |
| 4 | 84.0% | Ensemble | 83.2% | Gaussian SVM | 73.1% | Ensemble | 84.9% | Ensemble | 89.1% | Fine KNN |
| **Avg** | **83.2%** | **Ensemble** | **83.9%** | **Gaussian SVM** | **78.2%** | **Ensemble** | **82.6%** | **Ensemble** | **88.8%** | **Fine KNN** |

## Experiment 2

Features list:

1. GLRLMS {mean of 4 angles} (11)
2. GLCM (20)
3. Hu moments (7)

Experiment variables excluded:

1. 0
2. 2 – 23, 24
3. 5 – 2, 16, 22, 23, 24
4. 7 – 2, 13, 16, 22, 23, 24, 26
5. 12 – 1, 2, 3, 6, 13, 16, 17, 18, 22, 23, 24, 26

* Variables excluded using correlation matrix; no PCA;
* Tumor slides resized to 100\*100 pixels
* 10-fold cross-validation
* No histogram equalization

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Trial** | **A – accuracy** | **A – best classifier** | **B – accuracy** | **B – best classifier** | **C – accuracy** | **C – best classifier** | **D – accuracy** | **D – best classifier** | **E – accuracy** | **E – best classifier** |
| 1 | 89.1% | Fine KNN | 88.2% | Fine KNN | 88.2% | Fine KNN | 89.1% | Fine KNN | 89.9% | Fine KNN |
| 2 | 89.9% | Fine KNN | 89.9% | Fine KNN | 89.9% | Fine KNN | 89.1% | Fine KNN | 89.1% | Fine KNN |
| 3 | 88.2% | Fine KNN | 87.4% | Fine KNN | 88.2% | Fine KNN | 89.1% | Fine KNN | 88.2% | Fine KNN |
| 4 | 90.8% | Fine KNN | 89.9% | Fine KNN | 90.8% | Fine KNN | 91.6% | Fine KNN | 90.8% | Fine KNN |
| 5 | 89.1% | Weighted KNN | 89.1% | Weighted KNN | 89.1% | Weighted KNN | 88.2% | Weighted KNN | 89.9% | Weighted KNN |
| **Avg** | **89.42%** | **Fine KNN** | **88.90%** | **Fine KNN** | **89.24%** | **Fine KNN** | **89.42%** | **Fine KNN** | **89.58%** | **Fine KNN** |