Table 2 Four different method based on PCA, Decision tree, LDA,SVM

The classification model based on principal components

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Result | | | Leaving-one-out crossvalidation | | |
|  |  | Positive | Negative |  | Positive | Negative |  |
| 1,2,7,14 | Tumor | 292 | 2 | 99.32% | 292 | 2 | 99.32% |
|  | Para | 2 | 97 | 97.98% | 2 | 97 | 97.98% |
|  |  | 99.32% | 97.98% | 98.98% | 99.32% | 97.98% | 98.98% |
| 1,2,6,7,14 | Tumor | 292 | 2 | 99. 32% | 291 | 3 | 98.98% |
|  | Para | 1 | 98 | 98.99% | 0 | 99 | 100% |
|  |  | 99.66% | 98.00% | 99.24% | 100% | 97.06% | 99.24% |

Decision tree (C4.5)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Result | | | Leaving-one-out crossvalidation | | |
|  |  | Positive | Negative |  | Positive | Negative |  |
|  | Tumor | 293 | 1 | 99.66% | 282 | 12 | 95.92% |
|  | Para | 2 | 97 | 97.98% | 8 | 91 | 91.92% |
|  |  | 99.32% | 98.98% | 99.24% | 97.24% | 88.35% | 94.91% |

LDA

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Result | | | Leaving-one-out crossvalidation | | |
|  |  | Positive | Negative |  | Positive | Negative |  |
|  | Tumor | 0 | 294 | 0.00% | 22 | 272 | 7.48% |
|  | Para | 0 | 99 | 100% | 1 | 98 | 98.99% |
|  |  | 0.00% | 25.19% | 25.19% | 95.65% | 26.49% | 30.53% |

SVM

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Result | | | Leaving-one-out crossvalidation | | |
|  |  | Positive | Negative |  | Positive | Negative |  |
|  | Tumor | 293 | 1 | 99.66% | 291 | 3 | 98.98% |
|  | Para | 0 | 99 | 100% | 1 | 98 | 98.99% |
|  |  | 100% | 99.00% | 99.75% | 99.66% | 97.03% | 98.98% |