# Methodology:

1. 38 features extracted as follows:
   1. GLRLMS {mean of 4 angles} (11)
   2. GLCM (20)
   3. Hu moments (7)
2. “Low” and “High” grades lumped
3. Various feature selection methods applied:
   1. Univariate selection – top k-percentile features selected
   2. Recursive feature elimination (RFE) – Feature eliminated iteratively based on performance
4. 10-fold cross validation on final feature list

## Recursive elimination

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| # Features Excluded | Trial 1 | Best classifier | Trial 2 | Best classifier | Trial 3 | Best Classifier |
| None (38) | 94.8% | Fine KNN | 90.9% | Fine KNN |  |  |
| 3 (35) | 94.8% | Fine KNN | 90.9% | Fine KNN |  |  |
| 6 (32) | 94.8% | Fine KNN | 90.9% | Fine KNN |  |  |
| 9 (29) | 96.1% | Fine KNN | 90.9% | Fine KNN |  |  |
| 11 (27) | 96.1% | Fine KNN | 89.6% | Fine KNN |  |  |
| 13 (25) | 89.6% | Fine KNN | 87% | Fine KNN |  |  |
| 15 (23) | 88.3% | Fine KNN |  |  |  |  |
| 17 (21) | 88.3% | Fine KNN |  |  |  |  |
| 19 (19) | 85.7% | Fine KNN |  |  |  |  |