Table 1. Data sets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Abbrev. | Features | Objects | Classes | Difficulty |
| Spekboom | Spekboom | 46 | 57877 | 3 | 419.40 |
| Synthetic | Synthetic | 17 | 10000 | 2 | 294.12 |
| Statlog Landsat | Landsat | 36 | 3756 | 6 | 17.39 |
| Urban Land Cover | Urban | 147 | 261 | 9 | 0.20 |
| Botswana | Botswana | 145 | 1330 | 14 | 0.66 |
| Kennedy Space Centre | KSC | 176 | 1365 | 13 | 0.60 |

Table 2. Method and criteria combination

|  |  |  |
| --- | --- | --- |
| Method | Criterion | Abbreviation |
| Forward selection | Joint Mutual Information | FS-JMI |
| Feature Clustering and Ranking | Naive Bayes | FCR-NaiveBC |
| Ranking | Naive Bayes | Rank-NaiveBC |
| Forward selection | Naive Bayes | FS-NaiveBC |
| Backward elimination | Naive Bayes | BE-NaiveBC |
| Feature Clustering and Ranking | Mutual information | FCR-MI |
| Ranking | Mutual information | Rank-MI |
| Forward selection | Mutual information | FS-MI |
| Backward elimination | Mutual information | BE-MI |

Table 3. Feature selection parameters

|  |  |  |
| --- | --- | --- |
| Data Set | Num Features to Select | FCR Dissimilarity Threshold |
| Spekboom | 6 | 0.2 |
| Synthetic | 5 | 0.15 |
| Statlog Landsat | 4 | 0.2 |
| Urban Land Cover | 4 | 0.3 |
| Botswana | 7 | 0.03 |
| Kennedy Space Centre | 7 | 0.05 |

Table 4. Method cumulative execution time over all data

|  |  |
| --- | --- |
| Method | Time (s) |
| Rank-MI | 5.77 |
| JMI | 6.25 |
| FCR-MI | 6.46 |
| FS-MI | 24.71 |
| FCR-NaiveBC | 122.23 |
| Rank-NaiveBC | 145.55 |
| BE-MI | 815.23 |
| FS-NaiveBC | 831.99 |
| BE-NaiveBC | 5726.67 |

Table 5. Non-dominated ranking of methods by accuracy and stability

|  |  |
| --- | --- |
| Method | Rank |
| FCR-MI | 1.50 |
| FCR-NaiveBC | 1.83 |
| FS-NaiveBC | 1.83 |
| FS-MI | 1.83 |
| BE-NaiveBC | 2.83 |
| JMI | 3.00 |
| Rank-NaiveBC | 3.33 |
| Rank-MI | 3.50 |
| BE-MI | 3.50 |