**5. Experimental Results and Evaluation**

This section describes the datasets used and the results obtained on these datasets by applying the proposed method on these datasets.

**5.1 Datasets Used**

The experiments have been performed on eight microarray gene expression datasets. These are **AMLGSE2191, bladderGSE89, dlbcl, Leukaemiamattest, MLLmattest, prostatemattest** [add the remaining after experimentation]. The datasets consist of the gene expression values and the class labels associated with each data. Only a few samples have been used for training the classifiers.

**AMLGSE2191** dataset consists of …

[Provide description for each dataset]

**Table 1** gives a summary of the datasets used.

**Table 1.**  Summary of the eight microarray gene expression datasets used for the experiments

|  |  |  |  |
| --- | --- | --- | --- |
| **Dataset** | **Number of samples** | **Number of features** | **Number of classes** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**5.2 Results and discussion**

The experiment has been performed on the data (5 times) and the average accuracy has been noted for every dataset. For each of the datasets the proposed method has been applied by selecting 10, 50 and 100 features respectively. The feature selection technique used is mutual information. **Table 2** shows the accuracies obtained for the respective datasets using 10, 50 and 100 features, ***k=5*** and labelling at most ***max\_queried*** number of samples. In all of the experiments ***40%*** of the dataset was used for testing.

**Table 2.** Results of the proposed method on the datasets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Dataset** | **Samples** | **Features** | **max\_queried** | **k** | **Accuracy** |
| AMLGSE2191 | 54 | 10 | 30 | 5 |  |
| 50 | 30 | 5 |  |
| 100 | 30 | 5 |  |
| bladderGSE89 | 40 | 10 | 30 | 5 |  |
| 50 | 30 | 5 |  |
| 100 | 30 | 5 |  |
| dlbcl | 77 | 10 | 30 | 5 |  |
| 50 | 30 | 5 |  |
| 100 | 30 | 5 |  |
| Leukaemiamattest | 72 | 10 | 30 | 5 |  |
| 50 | 30 | 5 |  |
| 100 | 30 | 5 |  |
| MLLmattest | 72 | 10 | 30 | 5 |  |
| 50 | 30 | 5 |  |
| 100 | 30 | 5 |  |
| prostatemattest | 102 | 10 | 30 | 5 |  |
| 50 | 30 | 5 |  |
| 100 | 30 | 5 |  |

In order to compare the proposed method with other traditional classifier ensembling techniques the experiment was also performed by changing the ensembling technique to sum rule, product rule and maximum rule. **Table 3** shows a comparison among the aforementioned ensembling techniques when applied to active learning with the same parameters as the previous experiments.

**Table 3.** Comparison of the proposed method with other ensembling techniques

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Dataset** | **Samples** | **Features** | **Accuracy with average** | **Accuracy with sum** | **Accuracy with product** | **Accuracy with maximum** | **Accuracy with proposed method** |
| AMLGSE2191 | 54 | 10 |  |  |  |  |  |
| 50 |  |  |  |  |  |
| 100 |  |  |  |  |  |
| bladderGSE89 | 40 | 10 |  |  |  |  |  |
| 50 |  |  |  |  |  |
| 100 |  |  |  |  |  |
| dlbcl | 77 | 10 |  |  |  |  |  |
| 50 |  |  |  |  |  |
| 100 |  |  |  |  |  |
| Leukaemiamattest | 72 | 10 |  |  |  |  |  |
| 50 |  |  |  |  |  |
| 100 |  |  |  |  |  |
| MLLmattest | 72 | 10 |  |  |  |  |  |
| 50 |  |  |  |  |  |
| 100 |  |  |  |  |  |
| prostatemattest | 102 | 10 |  |  |  |  |  |
| 50 |  |  |  |  |  |
| 100 |  |  |  |  |  |

**Table 3** clearly shows ……[Analysis of the results graphs].

The dataset **prostatemattest** was chosen and the proposed method was applied to it with different values of ***k*** and the result tabulated in **Table 4.**

**Table 4.** Accuracy of the proposed method with different values of ***k*** for **prostatemattest** dataset.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |