For people with no python experience, we developed a Bayesian network module with genetic algorithm using WEKA tool. The Experiment performed same algorithms and measure the percentage of correctly classified instances and percentage of incorrectly classified instances.

This is what you need to do:

1. install WEKA version 3.8 and also Genetic search algorithm via package manager
2. Open the Iris dataset download form our website
3. Load BayesianNet\_Genetic model (download form our website)
4. Run and the result will be displayed

You can repeat to same steps for BaysianNet module.

**Results and Finding**

|  |  |  |
| --- | --- | --- |
| Classifiers  Metrics | Bayesian Network + Genetic Algorithm | Bayesian Network |
| Correctly Classified Instances (%) | 94.6667 | 92.6667 |
| Incorrectly Classified Instances (%) | 5.3333 | 7.333 |
| Kappa Statistic | 0.92 | 0.89 |
| Precision | 0.947 | 0.927 |
| Recall | 0.947 | 0.927 |
| ROC | 0.982 | 0.980 |
| Time taken (secs) | 0.06 | 0.02 |

Figure 1:

As it is depicted above, the model of Bayesian Network that was optimized using Genetic Algorithm had a better classification accuracy and also a lower inaccuracy.

Figure 2

As it seen from the Fig 2, Bayesian Networks optimized by Genetic algorithm had better statistical test scores than its counterpart.