

# Survey on Genetic Algorithm for Predicting Employees Performance

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**Abstract**— The relevant information can be originated through data mining process. In data mining, classification is one of the major tasks to impart knowledge from huge amount of data. This technique is widely used in various fields. Human capital is of a high concern for companies' management where their most interest is in hiring the highly qualified personnel which are expected to perform highly as well. Recently, there has been a growing interest in the data mining area, where the objective is the discovery of knowledge that is correct and of high benefit for users. This paper presents a study on the implementation of data mining approach using genetic algorithm for employee progression regarding to their exceeding performance in future. By using this approach, the performance patterns can be discovered from the existing database and will be used for future performance prediction in their career development.

**Key words:** Genetic Algorithm, Employees Performance

## I. INTRODUCTION

Data mining is the process of finding anomalies, patterns and correlations within large data sets to predict outcomes. Data mining is a young and promising field of information and knowledge discovery. It started to be an interest target for information industry, because of the existence of huge data containing large amounts of hidden knowledge. With data mining techniques, such knowledge can be extracted and accessed transforming the databases tasks from storing and retrieval to learning and extracting knowledge. Data mining consists of a set of techniques that can be used to extract relevant and interesting knowledge from data. Data mining has several tasks such as association rule mining, classification and prediction, and clustering.

Basically there are two approaches of data analysis that can be used for extracting models describing significant classes or to predict future data trends. These two forms are classification and prediction.

Classification techniques are supervised learning techniques that classify data item into predefined class label. It is one of the most useful techniques in data mining to build classification models from an input data set. The used classification techniques commonly build models that are used to predict future data trends.

Classification prediction encompasses two levels: classifier construction and the usage of the classifier constructed. The former is concerned with the building of a classification model by describing a set of predetermined classes from a training set as a result of learning from that dataset.

Basically genetic algorithm are adaptive heuristic search algorithm based on the evolutionary ideas of natural selection and genetics. As such they represent an intelligent exploitation of random search used to solve optimization problems. The basic techniques of genetic algorithm is to simulate processes in natural systems necessary for evolution, specially those follow the principles first laid down by Charles Darwin of survival of the fittest.

In this, we have implemented genetic algorithm for building classification model that is used to predict the performance of employees. This prediction is performed on the basis on various attributes. In genetic algorithm, we have termed this attributes as properties.

Initially, training is performed on initial population, in this, we have taken 30 employees as an initial population. Out of these 30 employees, best employees are selected by performing mutation and cross over on them. In this way, employees having better performance are selected. After performing testing on this employees, we obtain results. Already we have test results, and then this test results and our generated results are compared. On comparing both this results, we can calculate efficiency of our generated results.

## II. LITERATURE SURVEY

Several studies used data mining for extracting rules and predicting certain behaviors in several areas of science, information technology, human resources, education, biology and medicine. Al-Radaideh et al. [1] used data mining techniques to predict employee performance.

Karatepe [4] et al. defined the performance of a frontline employee, as their productivity comparing with their peers. Al-Radaideh et al. [8] also used data mining techniques to predict university students' performance. Many medical researchers, on the other hand, used data mining techniques for clinical extraction units using the enormous patients data files and histories, Lavrac was one of such researchers.

Chein and Chen [3] used several attributes to predict the employee performance. They specified age, gender, marital status, experience, education, major subjects and school tires as potential factors that might affect the performance. Then they excluded age, gender and marital status, so that no discrimination would exist in the process of personal selection. As a result for their study, they found that employee performance is highly affected by education degree, the school tire, and the job experience. Kahya [5] also searched on certain factors that affect the job performance. The researcher reviewed previous studies, describing the effect of experience, salary, education, working conditions and job satisfaction on the performance. As a result of the research, it has been found that several factors affected the employee's performance.

Salleh et al. [6], in their study, have tested the influence of motivation on job performance for state government employees in Malaysia. The study showed a positive relationship between affiliation motivation and job performance. As people with higher affiliation motivation and strong interpersonal relationships with colleagues and managers tend to perform much better in their jobs.

## III. CONCLUSION

Data mining is the process of analyzing and summarizing data from different perspectives and converting it into useful

information. Well known data mining techniques that can be used for predicting future trends in companies are Artificial Neural Network (ANN), Decision Tree, Bayesian Classifiers etc. This paper has concentrated on the possibility of building a classification model for predicting the employees' performance using genetic algorithm. On working on performance, many attributes have been tested, and some of them were found effective on the performance prediction.

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