Employee attrition prediction

Using machine learning

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INTRODUCTION

Employee attrition can be defined as the loss of the employee due to any of the following reasons:personal reasons,low salary,and bad business environment.Employee attrition occurs when employee are terminated by their employer for different reasons,such as low employee performance or business requirements.From early retirement or job offers from other firms .Another issue,hiring replacements,imposes high cost on the company,including the cost of interviewing,hiring and training.

This post presents a reference implementation of an employee turnover analysis project that is built by using python library.we also measure the accuracy of the models that are built by using Machine Learning,and we assess direction for the further development.

PURPOSE

Our aim from the project is to make use of pandas,numpy,matplotlib, libraries from the python to extract the libraries from machine learning for the employee attrition prediction.

And in the end,to predict whether the employee stay in company or not using voting ensemble techniques of combining the prediction from the multiple machine learning algorithms and the conclusions.

SOFTWARE DESIGNING:

- Jupyter Notebook Environment
- Spyder Ide
- Machine Learning Algorithms
- Python (pandas, numpy, matplotlib, seaborn, sklearn)
- HTML
- Flask

ADVANTAGES AND DISADVANTAGES

ADVANTAGES:

●There are many employee stay with the organization long,which might mean that they are getting top of their pay scale.

●Many employees when some people leave an organization they open gates for new talent and new ideas.

●If we can accurately predict which employee will leave their current company or organization,the it will save much time, effort,and cost of the employer and the help them to hire or acquire substitutes in advance,and it would not create a problem in the ongoing progress of an organization.

●There are employees who just have been working on a slow place for years within an organization.

● Provides good understanding of workforce supply and demand.

Disadvantages:

- Decreased overall performance.
- Lack of knowledgeable employees.
- Gives only less accuracy for the employees attrition status.

Applications

- Predictive attrition model helps not only taking preventive measures but also into making better hiring decisions.
- Derving trends in the candidates performance out of past data is important in order to predict the future trends,as well as to board new employees.
- So we use Machine Learning Algorithms to analyze the data and propose what employees need to achieve their needs.

CONCLUSIONS:

In employee attrition prediction problem,an estimation can be framed for either the employee will leave the company or not.In this paper, the regression algorithm is adopted to build a UI model for predicting employee attrition prediction default in the lending club and the results are compared with other six algorithms of logistic regression, KNN, random forest, decision tree and support vector machine. The experiment shows that the regression algorithm performs outstanding than the other six algorithms in the prediction of employee attrition prediction default and has strong ability of generalization. There is no definitive guide of which algorithms to use given any situation. What may work on some data sets may not necessarily work on others. Therefore, always evaluate methods using cross validation to get a reliable estimates. HR to take necessary action for the relation of employees predicting to be at risk of leaving.

Employee attrition prediction helps in not only taking preventive measures but also into making better hiring decisions. Deriving trends in the candidate's performance out of past data is important in order to predict the future trends, as well as to board new employees. Moreover, HR can use the employee data to predict attrition, the possible reasons behind it and can take appropriate measures to prevent it.