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Salary Prediction using Machine Learning Algorithm

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Abstract-: ***Machine learning is a form of technology that involves creating a computer programme capable of analysing data and use it to learn for itself in order to predict or detect more accurately. Today's technology that predicts very precisely, almost like a human, is very popular and helps to solve most prediction and detection issues. In this research, we propose a machine learning approach and certain essential attributes for employee wage prediction. With the help of our salary projection system, school students will receive better support regarding the salaries they may expect to receive once they have finished their courses. Through this paper we have tried to provide a system for salary prediction during which data processing technique is employed.***

Keywords— Salary prediction, salary, Machine Learning

I. INTRODUCTION

The pay of the corporation is constantly altered by employees in today's workforce. One of the reasons an employee leaves a company is because they are not paid what they want; occasionally, the employer suffers financial loss in exchange for paying what the person wants. The world of today is a competitive one, with everyone having their own greater expectations and goals. But, we should have a way to determine whether an employee is capable of earning the expected income, thus we are unable to provide everyone's expected salary.

The primary goal of this essay is to make compensation predictions for employees based on their years of experience and diligence. In this system, our primary focus is on the supervised learning technique for linear regression. Supervised learning is basically a learning task of a learning function that maps an input to an output of given example. In supervised learning each example is pair having input parameter and the desired output value.

Linear regression algorithm in machine learning is a supervised learning technique to approximate the mapping function to get the best predictions. The main goal of regression is the construction of an efficient model to predict the dependent attribute from a bunch of attribute variables. A regression problem is when the output value is real or a continuous value like salary.

II. LITERATURE SURVEY

1) Susmita Ray," A Quick Review of Machine Learning Algorithms," 2019 International Conference on Machine Learning, Big Data, Cloud and Parallel Computing (Com-IT-Con), India, 14th -16th Feb 2019 a brief review of various machine learning algorithms which are most frequently used to solve classification, regression and clustering problems. The advantages, disadvantages of these

algorithms have been discussed along with comparison of different algorithms (wherever possible) in terms of performance, learning rate etc. Along with that, examples of practical applications of these algorithms have been discussed.[1]

2) Sananda Dutta, Airiddha Halder, Kousik Dasgupta," Design of a novel Prediction Engine for predicting suitable salary for a job" 2018 Fourth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN) - focused on the problem of predicting salary for job advertisements in which salary are not mentioned and also tried to help fresher to predict possible salary for different companies in different locations. The corner stone of this study is a dataset provided by ADZUNA. model is well capable to predict precise value.[2]

3) Pornthep Khongchai, Pokpong Songmuang, "Improving Students' Motivation to Study using Salary Prediction System" - proposed prediction model using Decision tree technique with seven features. Moreover, the result of the system is not only a predicted salary, but also the 3-highest salary of the graduated students which share common attributes to the users. To test the system's efficiency, they set up an experiment by using 13,541 records of actual graduated student data. The total result in accuracy is 41.39%.[3]

4) Phuwadol Viroonluecha, Thongchai Kaewkiriya," Salary Predictor System for Thailand Labour Workforce using Deep Learning" - used Deep learning techniques to construct a model which predicts the monthly salary of job seekers in Thailand solving a regression problem which is a numerical outcome is effective. We used five-month personal profile data from well-known job search website for the analysis. As a result, Deep learning model has strong performance whether accuracy or process time by RMSE 0.774 x 104 and only 17 seconds for runtime.[4]

In this paper [5], they evaluate the importance of the features that can be used to forecast wages, after examining key aspects of the job market. Results suggest that these attributes contribute substantially to the final compensation perceived by workers, such as experience, work security, or certain job positions.

In this paper [6], Author developed such that there are initial feature vectors combined with log-based feature reduction. 1. A negated meaning is indicated by this semantic feature. 2. Quantification that is universal. 3. trigram of a part of speech 4. A noun phrase that starts with a pronoun and ends with a punctuation character.

III. PROPOSED SYSTEM

In this paper we are mainly predicted the employee's salary based on their year of experience. The methodology having the different phases like: data collection, data cleaning, feature engineering, data visualization, splitting data into training data and testing data,train data, test data, training data visualization, test data visualization, accuracy, output.

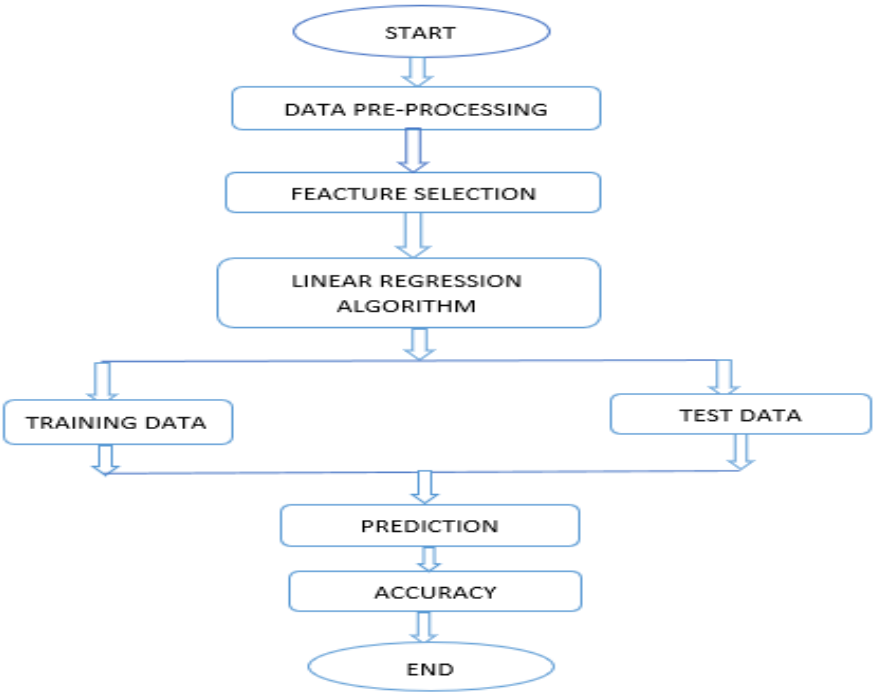

Fig -1: Proposed System

In order to gain useful insights into the job recruitment, we compare different strategies and machine learning models. The methodology different phases like: Data collection, Data cleaning, Manual feature engineering, Data set description, Automatic feature selection, Model selection, Model training and validation, Model comparison.

We are focusing to develop a system that will predict the salary based on different parameters used in company and above-mentioned methodology phases. Some of the parameters we collected from company data are: Job Type: CFO, CEO, Senior, vice president, manager.

We have to preparing the data, divide the data into the dependent and independent variable. Then split the data into training data and test data. After splitting the data perform the linear regression model with by default parameters and trained linear regression model with training data. And test the data then visualize the predicted data and actual data. Then calculate the difference between the actual salary value and predicted value. After that we have to visualize the training data, and draw the best fit line and plot all the training points of the training data.

CONCLUSION

With the aid of machine learning, we can anticipate an employee's wage based on their years of experience. There are numerous algorithms available to do this. SVM, Logistic Regression, and KNN are just a few of the algorithms. Although we have many algorithms, accurate prediction is still required to determine the employee's wage so that the person may take the appropriate safeguards; otherwise, the person may suffer penalties. So, the particular method must be accurate in order to anticipate correctly; as a result, we can perform better when predicting the outcome.

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