EMPLOYEE SALARY PREDICTION USING MACHINE

N.Ranga Sree[1] , A.Yamini[2], T.Sri Sravani[3] , K.Ravi Teja Reddy[4] ,

M.Navya Sri Veni[5] , [1]Asst Professor,[2,3,4,5]Students

Dept Of Computer Science And Engineering

Sri Vasavi Institute Of Engineering And Technology, Pedana, A.P, India

ABSTRACT:

Machine learning is a technology which allows a software program to became more accurate at pretending more accurate results without being explicitly programmed and also ML algorithms uses historic data to predicts the new outputs.

Because of this ML gets a distinguish attention. Now a day's prediction engine has become so popular that they are generating accurate and affordable predictions just like a human, and being using industry to solve many of the problems.

Predicting justified salary for employee is always being a challenging job for an employer.

In this project and proposing a salary prediction model with suitable algorithm using key features required to predict the salary of employee.

Keywords:

MachineLearning,Linearregression, Model selection, Supervised Learning

INTRODUCTION:

In this paper the main aim is predicting salary and making a suitable user-friendly graph. So that an Employee can get the desired salary on the basis of his qualification and hard work. For developing this system, we are using a Linearregression algorithm of supervised learning in machine learning. 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.

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LITERATURE SURVEY:

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]

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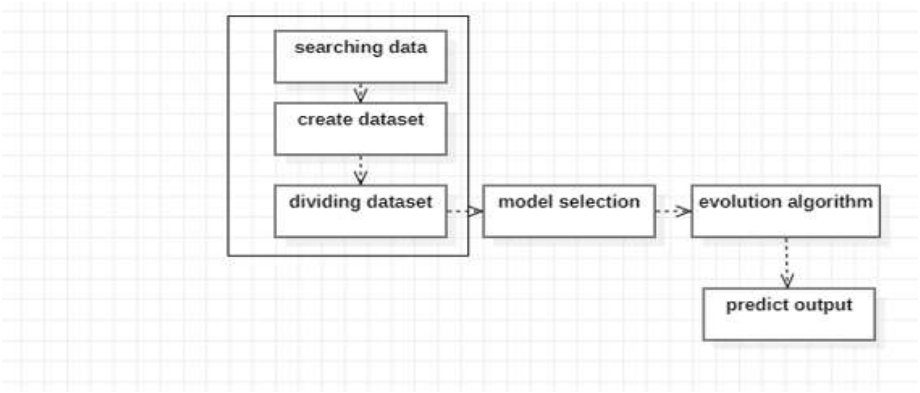
Sananda Dutta, Airiddha Halder, Kousik Dasgupta," Design of a novel Prediction Engine for predicting suitable salary for a job" 2018 Fourth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN) - focused on the problem of predicting salary for job advertisements 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]
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 wellknown 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.[3]

PROPOSED:

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.

SYSTEM ARCHITECTURE:



DATA SET:

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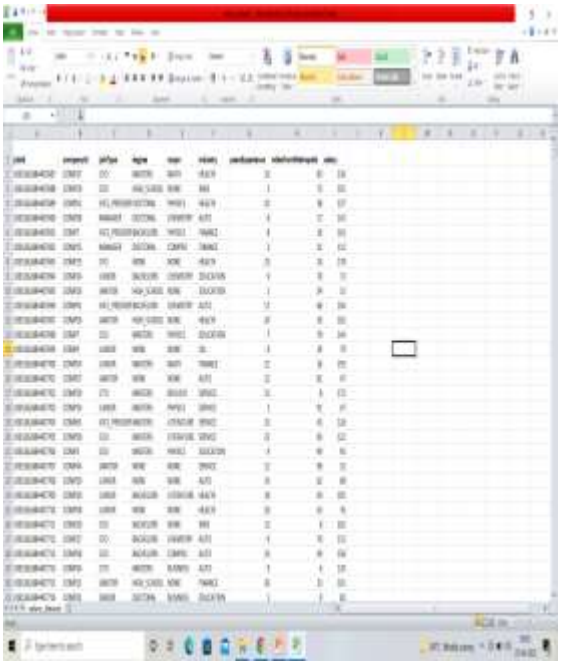

IMPLEMENTATION:

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 abovementioned methodology phases. Some of the parameters we collected from company data are: Job Type: CFO, CEO, Senior, vice president, manager

1. Degree: Doctoral, Bachelors, Masters, High School

2. Major: Math, Literature, Engineering, Business, Physics, Chemistry

3. Years Of Experience:

4. Industry: Health, Service, Finance, Product, Web, Education Miles from Metropolis:

5. Salary:

The calculations that will be performed for working of this proposed system to predict the salary with results:

Step 1: In step 1 we consider only Years' Experience vs Salary to create a base Model. Here X is the independent variable which is the "years' Experience". And y is the dependent variable which is the "Salary".

Step 2:

1. Fit linear regression model to database

2. Firstly, building a simple Linear Regression model to see what prediction it makes.

3. We will be using the LinearRegression class from the library sklearn.linear_model. We create an object of the LinearRegression class and call the fit method passing the X and y

Step 4:

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1. Now our main challenge is to add more parameters and maintain the accuracy

2. Next, we visualize each categorical (jobType, degree, major, industry, yearsExperience, milesFromMetroplis) feature to see which features could be good predictors of salary.

3. So, by visualizing each category we come to know that, yearsExperience yearsExperience has the highest correlation with salary. jobType also seems to be correlated with salary.

Step 5:

1. Create baseline Model

2. Baseline model is created on the dataset that contains all features using Linear Regression Where we will 80% data for training and 20% data to check our model.

3. Mean squared error (MSE) will be evaluated now along with accuracy to evaluate the baseline model's performance.

RESULTS:

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CONCLUSION:

In this paper we proposed a salary prediction system by using a linear regression algorithm with second order polynomial transformation. For the proper salary prediction, we found out most relevant 5 features. The result of the system is calculated by suitable algorithm by comparing it with another algorithms in terms of standard scores and curves like the classification accuracy, theF1score, the ROC curve, the Precision-Recallcurve etc. We compared algorithms only for the basic model which only two attributes. Moreover, we continued with basic model and found out the most appropriate method to add more attribute and with highest accuracy of 76%. In future work, we would like add graphical user interface to system and try to save and reuse trained model

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