Video Content

Greetings today we are going to present you

our project Human Resource Management: Prediction of Employee Promotions using

Machine Learning

so we start with importing the necessary libraries

and then we read the dataset which in the form of a csv file and contains 54,808 rows and 14 columns

Then we perform the various types of visualizations . We start with univariate analysis and then move on to Multivariate Analysis and finally Descriptive Analysis

Now we go on to the Data Preprocessing where we first drop the unwanted features and then check the null values and replace the null values of the respective attributes with their modes and then we remove the negative data which is removing the false positive

and then we handle the outliers using the Inter Quartile Range test and then convert the categorical values into numerical values into numerical values using label encoder

and then we handle the imbalanced using SMOTE and then finally we split the split the dataset into 70percent train and 30 percent test

Now we go on to the model building were we have used four models namely decision tree, random forest, knn and xgboost and we have defined a function for each of these models and for comparison we have defined a comparemodel function which gives us the classification report and confusion matrix of all the four models.

We observe that Random Forest is the model with the Highest accuracy

So now we save the model using pickle.

Now we move on to the Web Application development which we have done in Visual Studio code .

Here we created Four html documents namely home, about, predict, and submit .html

Next, we developed the backend of our application using Flask.

First, we load our trained machine learning model using pickle.

Then, we define several routes:

/home, /about, and /predict serve their respective HTML pages.

/pred handles the prediction logic. It collects user input from a form, processes the data, and passes it to the model.

Based on the model's prediction, we show a message stating whether the employee is eligible for promotion

Now we move on to the web application

so as you can see this is our home page and this is our about page which gives us the brief about the project.

Now we move on to the Predict page so here we have two test cases on is the employee getting promoted and the other one where the employee is not getting promoted

So we start with the first case , we enter our data and this is the output page for the employee getting promoted

now we go on to the second case, we enter our data and this is the output page for the employee not getting promoted

With that we conclude our project demonstration.

Thank You