**HR Analytics**

**Problem Definition:**

In this model we are going to analyze and predict the “Attrition” of employees from the given dataset*.* Attrition in human resources refers to the gradual loss of employees over time. In general, relatively high attrition is problematic for companies. HR professionals often assume a leadership role in designing company compensation programs, work culture and motivation systems that help the organization retain top employees.

**Data Analysis:**

The given dataset contains 1470 rows and 35 columns. Now we can proceed with the EDA (Exploratory Data Analysis) process to grab some useful insights which helps in predicting the Attrition rate of a company from the given dataset. We observed that the dataset has no null values but it contains both categorical and numerical values.

**EDA Concluding Remarks:**

We have gone through the EDA process to train the dataset, in which we have separated the column “Attrition” (renamed as target) since it is the target variable which needs to be predicted. Moving forward we have separated all the categorical columns to convert into numerical values using label encoding technique, Now the dataset is ready to build and train the machine learning model.

**Pre-processing Pipeline:**

In this process we have undergone to analyze the dataset which we have taken into action to predict the target such as required libraries, methods which we have followed to make sense of the given data which provides a highly sensible insights to build and train the machine learning model.

**Building Machine Learning Model:**

Hence, we are ready to build a sensible machine learning model which pulls out the exact attrition rate of a company. We have used Random Forest Regressor since it can handle missing values to get highly proportional output values. Finally, we got great numbers on accuracy score as of about 0.841836 which is 84.18%