



10Alytics

# EMPLOYEE TURNOVER

## PREDICTIVE ANALYSIS



# Introduction

In today's competitive business environment, organizations recognize that their most valuable asset is their people. However, recruiting and retaining top talent remains a significant challenge for many companies. To address this challenge, we propose a collaborative project between the HR department and the Data Science team to optimize employee recruitment and retention strategies using data-driven insights.



# About the Company



**Tech Innovations Inc.** is a leading technology company at the forefront of digital transformation and innovation. Established in 2005, we specialize in providing cutting-edge software solutions in the fields of artificial intelligence (AI), machine learning (ML), and data analytics. Our dedicated team, comprising experts from various departments including Sales, Marketing, Finance, and Engineering, collaborates seamlessly to deliver customized solutions to our clients across diverse sectors.

At **Tech Innovations Inc.**, we prioritize talent development and employee engagement, offering extensive training and mentorship programs to foster a culture of creativity and innovation. Our commitment to excellence extends to our ethical business practices and sustainability initiatives, as we strive to make a positive impact on society and the environment.

# Problem Statement



The organization is experiencing high turnover rates and struggles to attract and retain top talent in key positions. Traditional HR approaches have not been effective in addressing these challenges, and there is a need for more sophisticated, data-driven solutions to improve recruitment and retention outcomes.



# Objectives

The objective of this project is to leverage HR data and advanced analytics techniques to develop predictive models and actionable insights that will enhance employee recruitment and retention strategies. By identifying key factors influencing employee turnover and satisfaction, the organization aims to reduce turnover rates, improve employee engagement, and attract and retain high-performing employees.

# DATA DICTIONARY

## HR Data

- Employee\_ID: Unique identifier for each employee.
- Age: Age of the employee.
- Gender: Gender of the employee.
- Department: The department in which the employee works (e.g., Sales, Marketing, Finance, Engineering).
- Position: Job position or title of the employee (e.g., Manager, Engineer, Analyst, Specialist).
- Tenure: Length of time the employee has been with the organization (in years).
- Performance\_Rating: Performance rating of the employee, ranging from 1 (low) to 5 (high).
- Salary: Annual salary of the employee.
- Recruitment\_Source: Source from which the employee was recruited (e.g., Internal Referral, Job Board, Campus Recruitment).
- Satisfaction\_Score: Employee satisfaction score based on surveys or assessments.
- Last\_Promotion\_Years: Years since the employee's last promotion.
- Work\_Life\_Balance: Rating of work-life balance, ranging from 1 (poor) to 5 (excellent).
- Overworked: Indicates if the employee feels overworked (1 = Yes, 0 = No).
- Job\_Satisfaction: Rating of overall job satisfaction, ranging from 1 (low) to 5 (high).
- Distance\_From\_Work: Distance from work in miles.
- Commute\_Time: Average commute time in minutes.
- Number\_Of\_Promotions: Total number of promotions received by the employee.
- Turnover: Binary indicator of whether the employee has left the organization (1 = Yes, 0 = No).
- Turnover\_Description: Description of turnover status (Turnover or Retention).



# Deliverables

**Unified dataset containing cleaned and processed HR data; Exploratory data analysis report highlighting key insights and trends.**

**Predictive models for employee turnover and satisfaction.**

**Actionable insights and recommendations for optimizing recruitment and retention strategies.**

**Implementation plan for deploying data-driven strategies in HR processes.**

# Presentation to Stakeholders

The report should be presented to stakeholders in a structured manner, including:

- Executive Summary: Concise overview highlighting key findings and recommendations.
- Methodology: Explanation of data collection, analysis techniques, and assumptions made.
- Results: Presentation of findings through data visualizations, tables, and descriptive statistics.
- Recommendations: Actionable insights for program improvement, supported by analysis findings.
- Conclusion: Summary of the project outcomes and future considerations.

The presentation should be accompanied by visual aids such as slides, charts, and graphs to facilitate understanding and engagement. Additionally, a Q&A session can be conducted to address any queries or concerns from stakeholders.



You Are Expected To  
Present  
A Comprehensive  
Report Of This Task To  
The Stakeholders

DATASETS -

Tech HR Data