

Project Overview: Salifort Motors Employee Turnover Analysis

Scenario:

Salifort Motors, a global leader in alternative energy vehicle manufacturing with over 100,000 employees, is facing a significant challenge: high employee turnover. The company invests heavily in its workforce through recruitment, training, and professional development, making employee retention a critical business priority. The senior leadership team seeks to understand the underlying factors driving this turnover and develop effective strategies to mitigate it.

Business Objective:

As a data specialist at Salifort Motors, your task is to analyze employee survey data to:

1. **Predict Employee Turnover:** Develop a robust predictive model to identify employees at high risk of leaving the company.
2. **Identify Key Drivers:** Determine the factors significantly contributing to employee turnover, such as department, number of projects, average monthly hours, and other relevant data points.
3. **Provide Actionable Insights:** Generate data-driven recommendations to the leadership team to improve employee retention and satisfaction.

Deliverables:

To achieve these objectives, you will produce the following deliverables:

- **PACE Strategy Document:** A structured plan outlining the project's methodology, including planning, analysis, construction, evaluation, and execution stages.
- **Data Analysis & Model Building (Jupyter Notebook):** A comprehensive Python notebook showcasing the data analysis, model building (either logistic regression or tree-based machine learning models like Decision Tree, Random Forest, or XGBoost), and model evaluation.
- **Executive Summary:** A concise report summarizing the project's findings, model performance, and actionable recommendations for the leadership team.

Value Proposition:

This project provides Salifort Motors with:

- A predictive tool to proactively identify and address employee turnover risks.
- Data-driven insights to improve employee satisfaction and retention.
- Cost savings by reducing recruitment and training expenses.
- Enhanced organizational culture that supports employee success.

Key Takeaways & Skill Development:

This capstone project will:

- Demonstrate your ability to apply advanced data analytics skills using Python.
- Showcase your expertise in building and evaluating predictive models.
- Highlight your ability to translate data insights into actionable business recommendations.
- Strengthen your portfolio with a real-world data analysis project.
- Provide experience in communicating complex data to non-technical stakeholders.

Project Approach:

You will select and implement either a statistical model (logistic regression) or machine learning models (decision tree, random forest, XGBoost) to predict employee turnover. The chosen approach will be thoroughly documented, evaluated, and presented to the leadership team. The project leverages the PACE methodology to ensure a structured and effective analysis.

Goal:

The ultimate goal is to provide Salifort Motors with a data-driven solution that effectively reduces employee turnover, improves employee satisfaction, and contributes to the company's long-term success.