Salifort Motors

Employee Retention Model

▶ ISSUE / PROBLEM

Salifort Motors is determined to address the issue of high employee turnover by delving into its root causes.
Their objective is to develop a machine learning model capable of forecasting whether an employee intends to depart from the company. By doing so, they aim to pinpoint the specific elements within the work culture that influence these decisions.

▶ RESPONSE

Given the categorical nature of the variable we aim to predict, the team has the option to construct either a logistic regression or a tree-based machine learning model.

After evaluation, it was found that the random forest model demonstrates slightly superior performance compared to the decision tree model.

▶ IMPACT

By utilizing this model, Salifort Motors can accurately predict whether an employee is likely to leave the company and identify the key factors influencing their decision.

Armed with these insights, the HR department can make informed decisions to enhance employee retention strategies and foster a more conducive work environment.
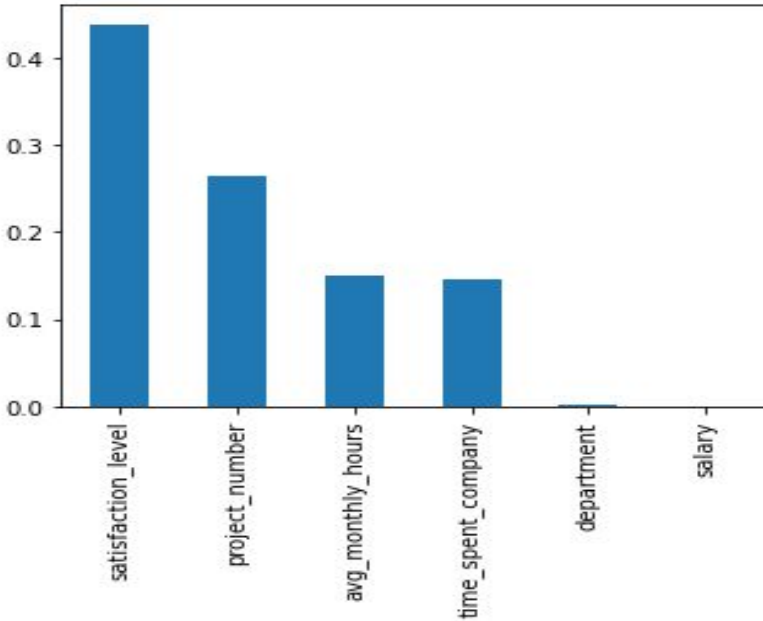
First model showing that satisfaction level is the most important factor in determining whether an employee chooses to leave.
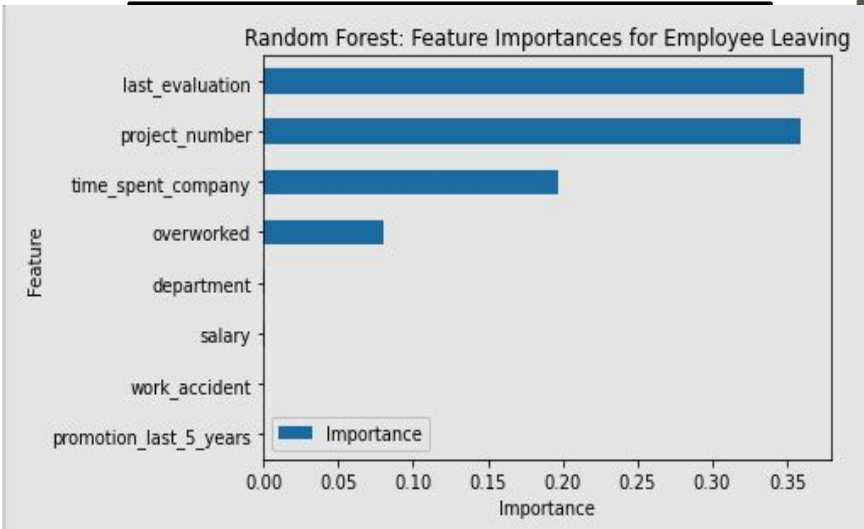
Final model showing most important factors that determine employee satisfaction

▶ KEY INSIGHTS

The satisfaction level of employees is the primary factor in determining whether they will leave or stay, with a 96% accuracy rate in the model. However, relying solely on this metric may not be ideal, as it could indicate a pre-existing intention to leave. A more effective approach involves considering other factors to predict employee satisfaction before it becomes unsatisfactory.

A second model was developed using alternative metrics, revealing that employees who were deemed overworked, putting in more hours without a corresponding increase in pay, experienced unsatisfactory work conditions. This factor emerged as the decisive element contributing to dissatisfaction in the workplace.

Furthermore, it was observed that among the seven different projects examined, employees working on project number 3 were more inclined to leave and experience overwork compared to those on other projects. It is recommended to investigate the managers of this project to uncover potential issues contributing to these trends.