Luke's Capstone Project - Salifort Motors

Employee Retention Project

ISSUE / PROBLEM

Salifort Motors seeks to improve employee retention and answer the following question:

What factors contribute to an employee's decision to leave a company?

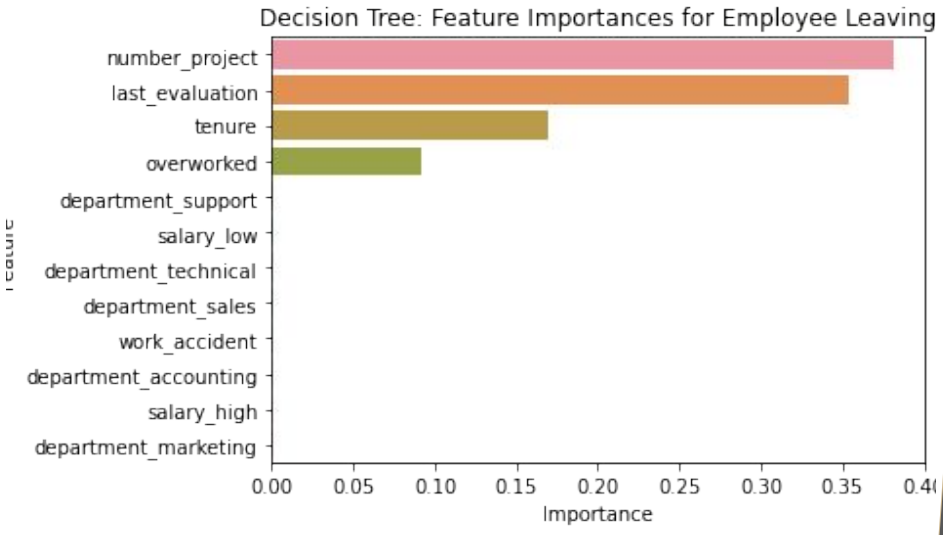
RESPONSE

As the target variable is categorical, the team has the option to implement either a logistic regression model or a tree-based machine learning model.

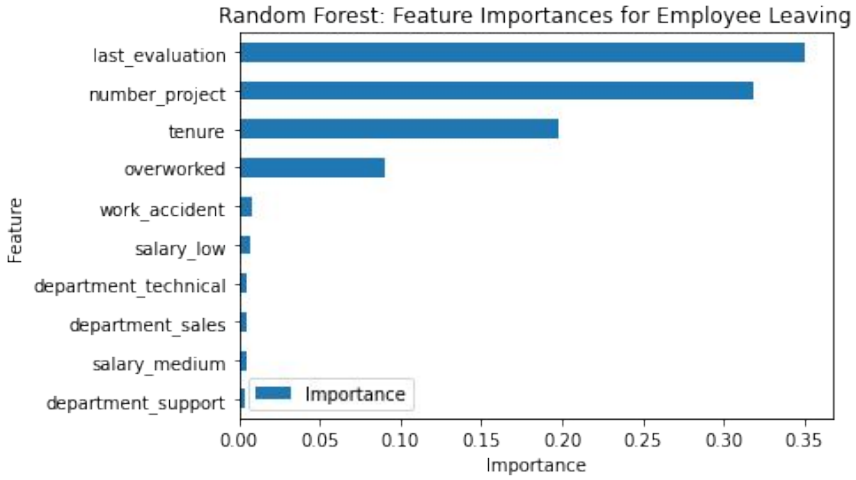
Among the tree-based approaches, the random forest model demonstrates slightly better performance compared to the decision tree model.

IMPACT

This model is designed to predict employee turnover and pinpoint the key factors influencing their decision to leave. By leveraging these insights, HR can make informed decisions to enhance employee retention strategies.



Barplot above shows the most relevant variables: *'last_evaluation', 'number_project', 'tenure'* and *'overworked'*.



In the random forest model above, `*last_evaluation*`, `*tenure*`, `*number_project*`, `*overworked*`, `*salary_low*`, and `*work_accident*` have the highest importance. These variables are most helpful in predicting the outcome variable, `*left*`.

INSIGHTS/NEXT STEPS

- Limit the number of projects assigned to employees to prevent burnout and maintain productivity.
- Offer promotions to employees with at least four years of tenure or investigate the root causes of dissatisfaction among long-term employees.
- Either recognize and reward employees for extended working hours or adjust expectations to avoid requiring excessive overtime.
- Clearly communicate overtime pay policies and ensure employees are well-informed. Define workload and time-off expectations to avoid ambiguity.
- Facilitate open discussions across the organization and within teams to address and improve company culture at both broad and specific levels
- Avoid reserving high evaluation scores solely for employees working 200+ hours per month. Instead, implement a proportionate reward system that acknowledges effort and contributions equitably.