Employees turnover prediction project.

Prepared for Salifort Motors' HR Department.

Project Overview

The leadership team asked the data team to analyse the survey data provided by HR and come up with ideas for how to increase employee retention. Currently, there is a high rate of turnover among Salifort employees (this includes both employees who choose to quit their job and employees who are let go), which is costly in the financial sense. For this reason, we will build a machine learning model capable of predicting whether an employee will stay or leave the company, and analyse the most influential factors.

Key Insights

Half of the staff members works overtime, which has a negative impact on satisfaction levels. The company should hire more employees in order to distribute the workload more equally and to reduce the overall overtime.

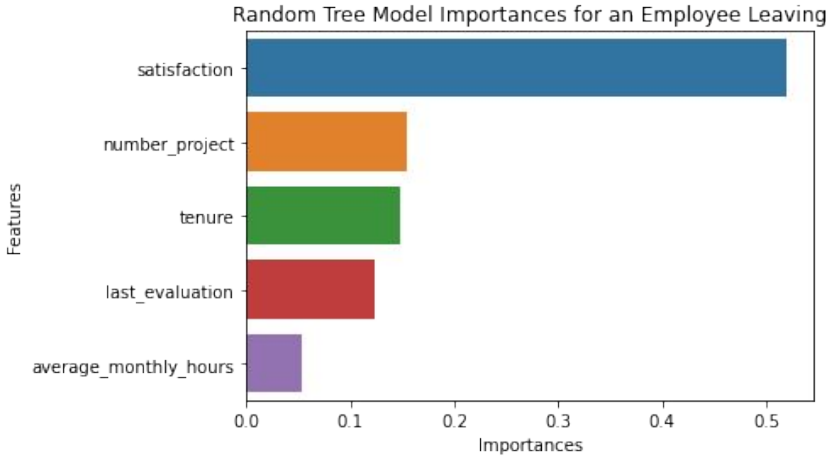
Likewise, employees handle too many projects at the same time which has proved to cause people to leave the company.

Despite working long hours in multiple projects, it seems that employees aren't given any promotions. Managers should value their teams' effort with positive feedback and pay rises.

The longer the tenure, the less likely an employee leaving the company will be.

Details

A Random Forest model was trained and tested, resulting in it being capable to correctly predict employees departures in the 96,3% of the cases. Satisfaction level, number of projects, tenure, last evaluation score and average monthly hours are the most influential factors in predicting employees turnover.



Next Steps

This baseline model has lots of room for improvement and further investigation. We could try building an XGBoost model, or exclude those columns lacking of predictive power. Plus, building a K-means model would help better understand the different groups of employees in the company.