

# Salifort Motors Employee Churn Project

## Executive Summary

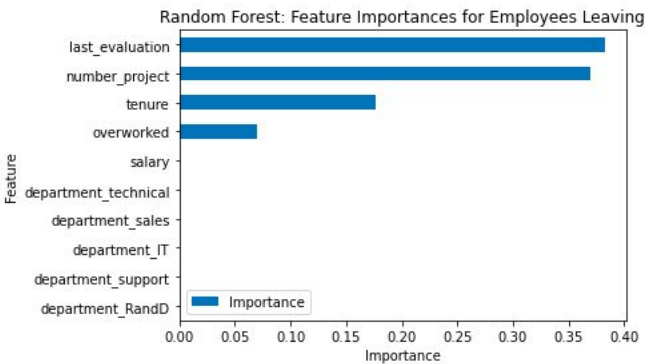
### Project Overview

Salifort Motors is seeking to improve employee retention so we are looking for any potential reasons leading to employees leaving the company. We are seeking to predict a categorical variable therefore we have built a tree-based machine learning model for this project.

### Key Insights

- We created two sets of two different types of tree-based ML models, a decision tree model and a random forest model
  - After creating the first set feature engineering was conducted prior to the creation of the second set
  - The random forest model out performed the decision tree model in both sets of models
- The champion models were chosen based on the auc score
- The features that held the highest importance in predicting if an employee will leave the company are:
  - The employee’s last evaluation score from the company
  - The number of projects assigned to the employee
  - The employee’s tenure at Salifort Motors
  - If the employee was working much more hours that what is deemed standard (167 hours/month)
- It seems that employees at Salifort Motors are overworked and underappreciated. These are two key issues leading toward employee churn.

### Details



A chart showcasing the top 10 features in terms of importance in predicting employee churn.

model	f1	precision	recall	accuracy	auc
Random Forest2 Test	0.836777	0.861702	0.813253	0.947298	0.893627

The scoring metrics of our champion model after being used with the test data

### Next Steps

- Considering the key features of importance it would be smart to limit the amount of projects and employee can be assigned per month at Salifort Motors
- Taking a look into potential company changes that can improve efficiency so that employees are not required to work well above 167 hours per month, if this isn’t possible look into making the environment more enjoyable
- Communicate effectively the job requirements in full if they are demanding by nature to ensure that employees joining the company know what they are getting into.
- Reevaluating promotion criteria to see if there is a reason why employees who believe they have done enough for a promotion are not receiving one
- Have consistent management and employee meetings to discuss ongoing issues in order to rectify them before they grow