

Salifort Employee Retention Predictions

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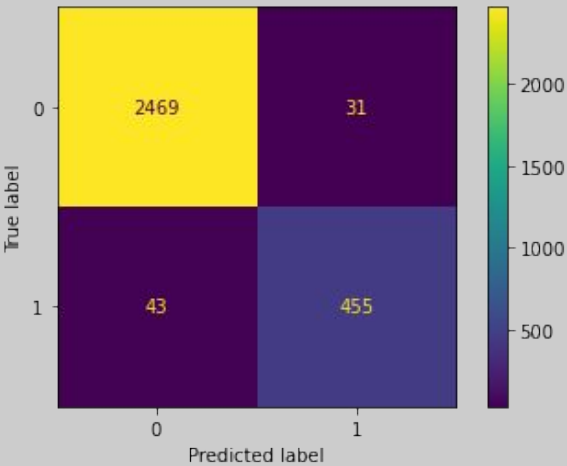


Project Overview

Salifort’s HR department is investigating the employee churn rate on its employees. They are trying to figure out **what makes employees more likely to leave**, which can be best achieved through a **decision tree machine learning model to predict employee churn** based on the results of a recent employee survey.

Details

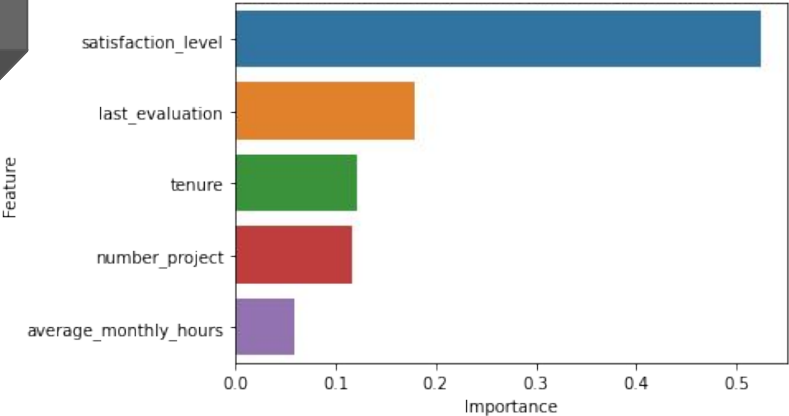
Key Insights



After creating the predictions from the machine learning model, it has proven to be reliable in terms of predicting the events that will happen with an **F1 score of over 92%**.

The confusion matrix above confirms its reliability, where there are **2469 true positives** and **455 true negatives**, which accounts for over **98% of all the predictions the model made**.

Decision Tree: Most Important Features for Churning Employees



The most important feature is clearly **satisfaction_level**, which has the **highest gini importance of ~52%**. Salifort employees are more likely to leave if they have a **low satisfaction level**, which makes sense because they would not want to stay somewhere they’re not happy at.

Next Steps

For a more accurate test, we might try different models in the future for comparison, like **logistic regression**. Exploring how a model acts with no trees could be a plan for the future.

Data leakage is still a concern within the model itself. The predictions may change drastically if the same samples are used on different models, which depends on the computer’s processing power. As such, **more testing and modeling may be needed to make a final analysis**.