

Executive Summary: Salifort Motors Employee Retention Strategy

Predictive Modeling and Strategic HR Interventions to Reduce Turnover

Overview

To mitigate costly employee turnover, this project employed advanced machine learning to predict attrition risks and simulated A/B testing to evaluate HR interventions. By analyzing employee survey data and leveraging the predictive power of the tuned XGBoost model, we aimed to deliver actionable insights that enable Salifort Motors to develop effective retention strategies and optimize HR policies.

Problem

Salifort Motors is experiencing a significant rate of employee turnover, leading to increased recruitment and training costs, reduced productivity, and potential damage to employee morale. This instability necessitates the development of data-driven retention strategies to ensure a stable and skilled workforce, ultimately minimizing financial losses and fostering a positive work environment.

Solution

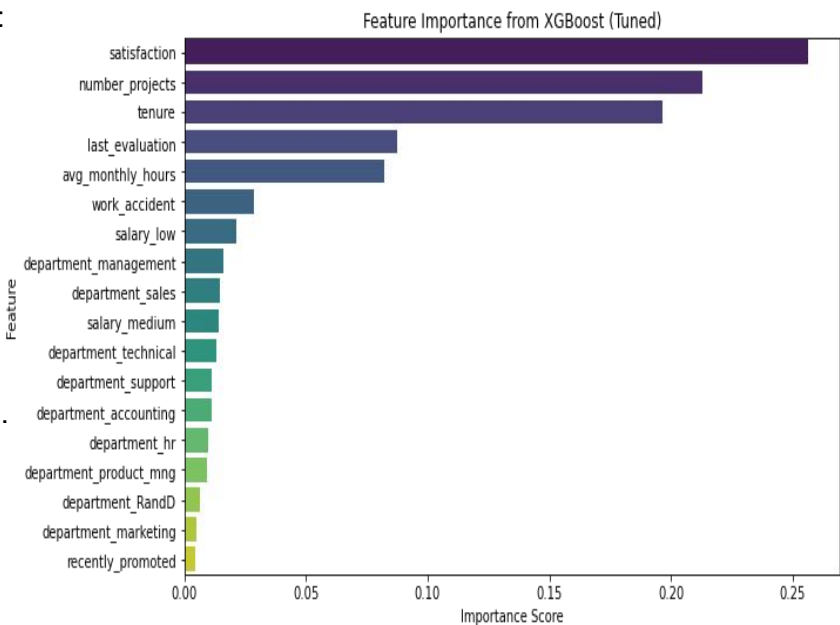
A high-accuracy predictive model was developed using the tuned XGBoost algorithm to identify employees at high risk of leaving, enabling proactive and targeted retention efforts. Simulated A/B tests were also conducted to assess the impact of key HR interventions, such as mentorship programs and flexible work arrangements, providing evidence-based insights for HR policy decisions and resource allocation.

Details

- **XGBoost Model:** High accuracy, key drivers: satisfaction, workload, tenure.
- **A/B Tests:** Mentorship reduces turnover; flexible work boosts satisfaction; salary/training show positive impacts.
- **Data:** Duplicate data removed for accuracy.
- **Ethics:** Bias mitigation and transparent model use.

Key Recommendations:

1. **Deploy XGBoost:** Identify at-risk employees.
2. **Address Key Drivers:** Improve satisfaction, manage workload, adjust salaries.
3. **Implement Mentorship:** Reduce turnover.
4. **Offer Flexible Work:** Boost satisfaction.
5. **Real-World A/B Tests:** Validate simulations.



Next Steps

1. **Cost-Benefit Analysis:** Evaluate the ROI of proposed retention strategies.
2. **Pilot Program:** Test the model and retention strategies in a controlled environment.
3. **HR Dashboard:** Develop an interactive dashboard for HR to track key metrics and model predictions.
4. **Departmental Analysis:** Conduct in-depth research into department-specific and job title-specific turnover drivers.
5. **Continuous Monitoring:** Establish a system for ongoing model monitoring, updates, and employee feedback integration.
6. **Real world A/B tests:** Design and implement real world A/B tests to validate the simulated test results.