

EXECUTIVE SUMMARY

Salifort Motors: Employee Retention Project

Prepared For: HR Leadership Team
Date: November 22, 2025

🎯 Problem & Objective

Salifort Motors is facing a turnover rate of **16.6%**. The HR team tasked data analytics with answering: *"What is likely to make an employee leave?"*
Our goal is to reduce the cost of hiring and training by identifying at-risk employees using predictive modeling.

💡 Key Findings & Insights

Our analysis of 15,000 employee records revealed three critical patterns driven by workload and tenure:

1. The Burnout Effect (Workload)

Employees working on **6 or more projects** or logging **250+ hours/month** have drastically higher turnover. Conversely, those with 3-4 projects are stable.

2. The "4-Year Wall" (Tenure)

There is a distinct spike in attrition at the **4-year mark**. Employees who stay past this hurdle (Year 5+) tend to remain indefinitely, suggesting a "mid-career crisis" or lack of advancement.

3. High-Performer Risk

Employees with high evaluation scores (high performers) who also work long hours are leaving. We are losing our best talent to burnout.

✅ Recommendations

To improve retention, we propose the following immediate actions:

- **Cap Projects at 5:** Strictly limit project counts. Review workloads for anyone with 6+ projects immediately.
- **Investigate the 4-Year Itch:** Conduct "Stay Interviews" specifically for employees approaching their 4th anniversary to understand their career path needs.
- **Overtime Reform:** Disincentivize managers from relying on 200+ hour work months. Reward efficiency, not just raw hours.

MODEL PERFORMANCE

(Random Forest - Test Set)

93.8%
AUC Score

96.2%
Accuracy

87.0%
Precision

90.4%
Recall

**Scores based on final Test Set evaluation (rf2).*

👍 Benefits

- **Proactive:** Identifies flight risk *before* resignation.
- **Targeted:** Focuses HR resources on specific groups (e.g., 4-year tenure).

⚠️ Limitations

- **No "Why":** Model predicts *who*, but qualitative interviews are needed for *why*.
- **Satisfaction Data:** Relies on up-to-date satisfaction scores.