

# Employee Attrition Prediction – Executive Summary

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This project analyzes HR data from 15,000 employees to understand which factors drive turnover and builds a logistic regression model to predict which employees are most at risk of leaving. The dataset includes satisfaction scores, workload, tenure, salary levels, promotion history, and departmental assignments.

The exploratory analysis highlights several consistent drivers of attrition:

- Employees with **low satisfaction levels** are significantly more likely to leave
- **High monthly workloads** are connected to burnout and higher turnover
- Employees without **promotions in the last five years** show higher attrition
- Lower salary levels correlate with increased risk of leaving
- Mid-tenure employees experience higher churn, suggesting a “frustration point”

A logistic regression model was developed to predict employee attrition. The final model showed strong performance with good accuracy and ROC-AUC. The model is interpretable and well-suited for HR teams.

## Key Recommendations

1. Reduce excessive workload and overtime for high-burnout departments
2. Improve recognition and promotion opportunities for top performers
3. Review compensation levels in roles with high attrition
4. Implement ongoing satisfaction monitoring for early-tenure employees
5. Use the predictive model to flag high-risk employees for follow-up

This work provides leadership with a foundational, data-driven approach to improving retention and reducing turnover costs.