Employee Attrition Prediction Using Machine Learning

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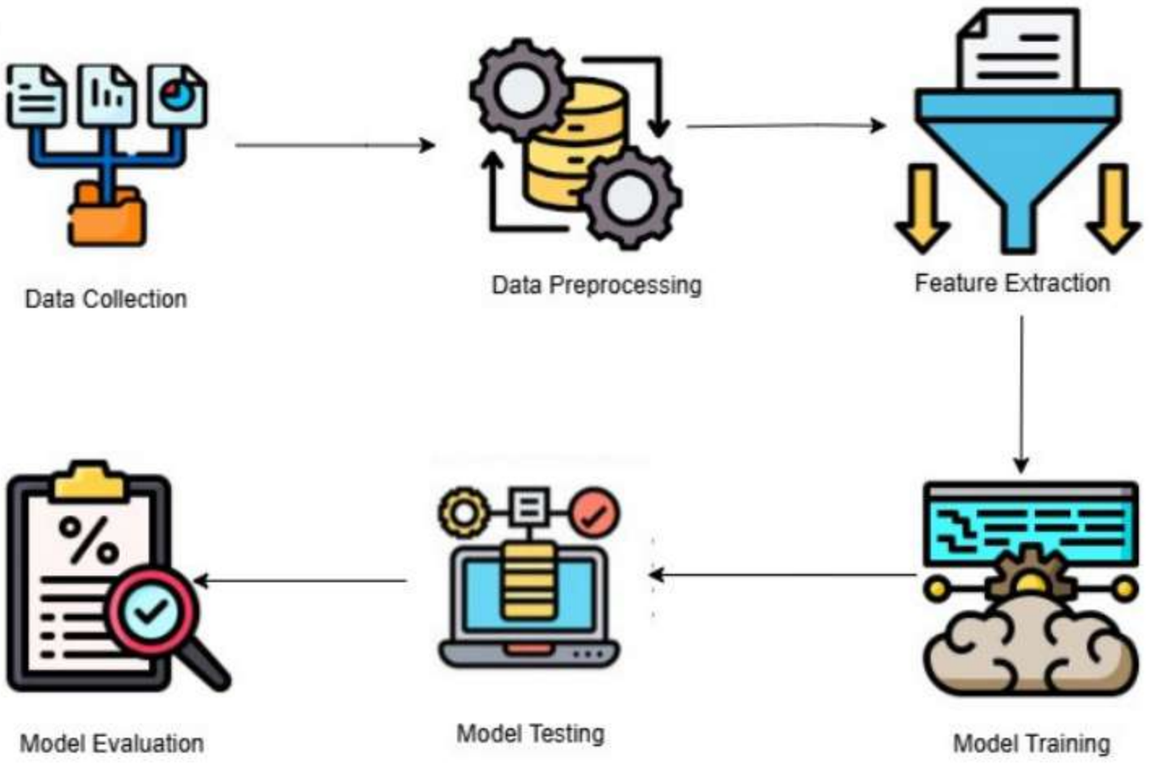
Problem Statement

Employee attrition poses a significant challenge for organizations, leading to increased recruitment costs, productivity loss, and operational delays. With employee turnover influenced by diverse factors such as job role, income, company reputation, and personal circumstances, understanding and predicting attrition is critical. There is a need for a reliable model that can help organizations predict attrition and proactively improve retention strategies.

Project Overview

- Uses Machine Learning to predict employee attrition based on various factors.
- Considers employee job level, job statisfaction, Leadership Opportunities, Company reputation etc.
- Trained on historical HR data (e.g., employee tenure,monthly income etc.).
- Provides actionable insights for retention strategies and optimizing workforce planning.
- Utilizes predictive modeling techniques to estimate future attrition trends and challenges.

Methodology



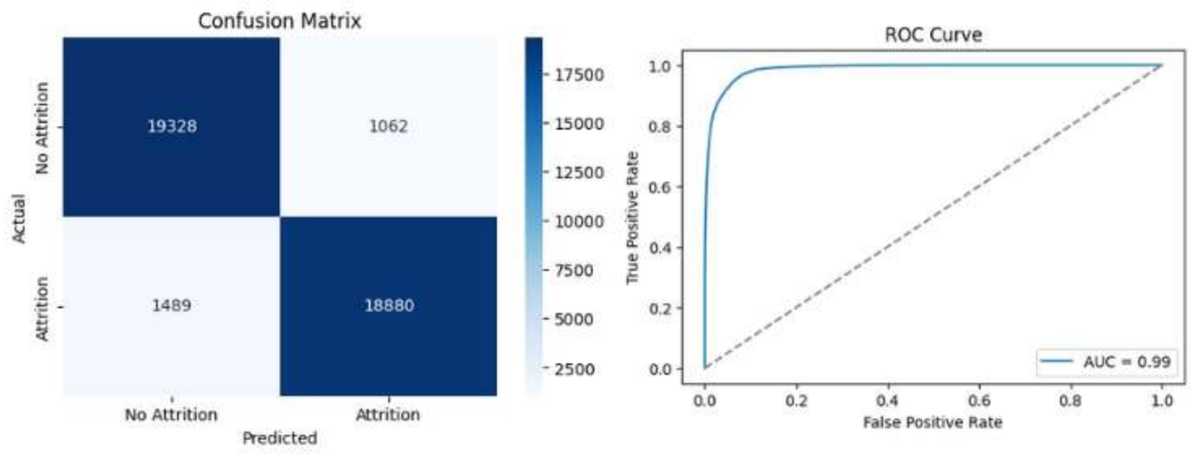
Technologies

Dataset

- The dataset was obtained from Kaggele having 74k rows and 24 columns
- The dataset is composed of both categorical data (e.g., department, job role) and numerical data (e.g., age, salary).
- The dataset may exhibit class imbalance, as the number of employees who stay vs. leave were not equal

Outcomes

- The accuracy obtained in this project was 94% using Random Forest.
- This project aims to provide organizations with valuable insights into the potential risk of employee attrition, enabling them to implement effective retention strategies.
- The predictions will help businesses forecast workforce gaps, enabling better resource allocation and timely recruitment efforts.



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2022-CS-148

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