

# **HR Predictor Employee Turnover Prediction System**

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## ABSTRACT

In this connected era, High amount of employee turnover has been one of the major problem that is faced by HR professionals of companies. Employees are critical resources of the organizations, and retaining them has been an critical success factor for the companies' success and continues growth. High turnover could be an indication that employees are unsatisfactory with the workspace. To compete in the workforce, companies are continuously working hard to recognize them self as employee friendly company to attract more employees. Employee's satisfaction is one of the main indicator to identify the organization value.

The primary requirement to predict the employee turnover is data. The organization have started heavily invest in the data management and information systems, including HR Information Systems (HRIS). They contain massive amount of data related to employees. Utilizing data visualization techniques and machine learning techniques, the management can figure out implicit patterns to predict turnover.

This study used combination of approaches to build an industry level prediction system such as: Hyper parameter optimization, imbalance correction and hybrid model. As the result of experimenting 7 different types of machine learning algorithm, the hybrid model was composed of Random Forest and Extreme Gradient Boosting Algorithms. The hybrid model proposed has been able to achieve accuracy of 97.83% outperforming the single models.

**Keywords:** Employee Turnover prediction, Machine Learning, Turnover prediction, Ensemble learning algorithms, Hybrid models, Imbalance Correction