Investigation and Use of Ml Methods for Predicting Employees Performance

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Abstract: Employee performance analysis is crucial for organizations to enhance productivity and make informed decisions. This paper proposes a system that predicts employee performance based on various factors, including personal and geographical characteristics, job level, social economy, and psychological disturbances. The system utilizes machine learning algorithms, such as support vector machines, random forests, and naive Bayes, to predict employee performance. The proposed system aims to optimize decision-making processes and improve employee retention.

I.   Introduction:

Human Resources (HR) analytics plays a significant role in demonstrating the impact of HR on business outcomes. By systematically identifying and measuring the key drivers of business results, HR analytics enables companies to invest in the right employees. With the help of HR analytics, HR managers can make informed decisions regarding employee investments to achieve favorable outcomes for stakeholders and customers. Employee turnover, which causes substantial losses for companies, can be mitigated through the use of predictive analytics and machine learning techniques. Machine learning, a subset of artificial intelligence, can extract patterns from existing data and predict future outcomes. Employee turnover forecasting helps HR managers anticipate future departures, allowing them to implement retention efforts proactively. Automation of personnel estimation and retention decisions can be achieved through supervised training and classification algorithms.

Existing Systems: Existing systems for predicting employee performance include techniques like gradient boosting. Gradient boosting is a machine learning method used for regression and classification tasks. It combines weak predictive models, typically decision trees, to form an ensemble model. However, existing systems suffer from limitations such as lack of accuracy and quality control.

Proposed System: The proposed system employs different algorithms to predict employee performance. The system follows several steps, including data preprocessing, feature extraction, training and testing, performance evaluation based on accuracy, optimization, and the establishment of a knowledge base. By analyzing patterns and relationships among employees, the system can make accurate forecasts about employee performance and provide insights into overall performance trends.

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