Clarusway

الأكاديمية السعودية الرقمية
SAUDI DIGITAL ACADEMY

Employees Churn Analysis

HUMAN RESOURCES DEPARTMENT

NEXASPHERE
FUTURE OF MARKETING

But Deeper...

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Presentation Outlines

1. HR Department
2. Objectives
3. Real-Life Example
4. Visual Example
5. Targeted Strategies
6. Conclusion

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In NexaSphere our employees' happiness is our top priority, therefore, knowing why some of our employees might leave us helps us enhance our ability to offer them more because we certainly know that our employees deserve nothing but the best!

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Our primary objectives of Employees Churn Analysis

Identifying Reasons for Turnover

Including examining factors such as job dissatisfaction, lack of growth opportunities, poor work-life balance, and other contributors to turnover.

Predicting Future Churn

HR can anticipate which employees may be at a higher risk of leaving, allowing for proactive measures.

Developing Retention Strategies

Including adjustments to compensation, benefits, professional development programs, and other factors that impact employee satisfaction.

Enhancing Employee Engagement

Churn analysis helps tailor engagement initiatives to address specific concerns and foster a positive work environment.

Maintaining a Positive Organizational Culture

Ensuring that the organizational culture aligns with the values and expectations of employees.

Alright,
let’s talk numbers

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Dataset Description

- **HR dataset** of a company (collected by clarusway)
- Consists of **14,999** samples and **10** features.
- **Two types** of employee (one who **stayed** and another who **left** the company).

satisfaction_level	last_evaluation	number_project	average_montly_hours	time_spend_company	Work_accident	left	promotion_last_5years	Departments	salary
0.380	0.530	2	157	3	0	1	0	sales	low
0.800	0.860	5	262	6	0	1	0	sales	medium
0.110	0.880	7	272	4	0	1	0	sales	medium
0.720	0.870	5	223	5	0	1	0	sales	low
0.370	0.520	2	159	3	0	1	0	sales	low

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Dataset Description

- **satisfaction_level:** It is employee satisfaction point, which ranges from 0-1.
- **last_evaluation:** It is evaluated performance by the employer, which also ranges from 0-1.
- **number_projects:** How many of projects assigned to an employee?
- **average_monthly_hours:** How many hours in averega an employee worked in a month?
- **time_spent_company:** time_spent_company means employee experience. The number of years spent by an employee in the company.
- **work_accident:** Whether an employee has had a work accident or not.
- **promotion_last_5years:** Whether an employee has had a promotion in the last 5 years or not.
- **Departments:** Employee's working department/division.
- **Salary:** Salary level of the employee such as low, medium and high.
- **left:** Whether the employee has left the company or not.

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What were our findings in the EDA?

Our expert team members will take you to our lab (notebook) to show you what happened in the EDA

we will be back here soon

we will kick out this employee soon

This is Eng.Majed BTW say goodbye to him

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Classification Methods

Logistic Regression

It is a statistical method used for binary classification, predicting the probability of an observation belonging to one of two classes. It models the relationship between a dependent variable and one or more independent variables by estimating probabilities using a logistic function.

SVM (Support Vector Machine)

It is a ML algorithm used for both classification and regression tasks. It works by finding the hyperplane that best separates data points into different classes while maximizing the margin between classes. It is effective in high-dimensional spaces and is versatile for handling various types of data.

Random Forest

It is an ensemble learning algorithm in ML that operates by constructing a multitude of decision trees at training time and outputs the mode of the classes for classification tasks or the average prediction for regression tasks. It improves accuracy and reduces overfitting by combining predictions from multiple decision trees.

Naïve Bayes

It is a probabilistic ML algorithm based on Bayes' theorem. It is simple, efficient and particularly used for classification tasks. The algorithm assumes independence between features, hence "naïve," and calculates the probability of a given instance belonging to a particular class based on the probability of its features.

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Classification Methods

XGBoost (Extreme Gradient Boosting)

It Is a ML algorithm known for its speed and performance in supervised learning tasks. It belongs to the gradient boosting family and uses an ensemble of decision trees to make accurate predictions. It incorporates regularization techniques and parallel processing, making it highly efficient and widely used in various applications, including classification and regression tasks.

AdaBoost (Adaptive Boosting)

It is an ensemble learning algorithm that combines the predictions of multiple weak learners to create a strong and accurate model. It assigns different weights to data points, emphasizing the misclassified ones in each iteration, and sequentially builds a series of weak models. It is particularly effective in improving the performance of decision trees and is commonly used for classification tasks.

ANN (Artificial Neural Network)

It is a computational model composed of interconnected nodes, or artificial neurons, organized in layers. Inspired by the structure and functioning of the human brain, an ANN processes information by learning and adjusting weights associated with connections between neurons. It is capable of recognizing patterns, making predictions, and performing various tasks, making it a foundational component in the field of deep learning and machine learning.

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How did we analyse employees churn ?

Our expert team members will show you how we used the mentioned methods to analyse employees churn

we will be back here soon

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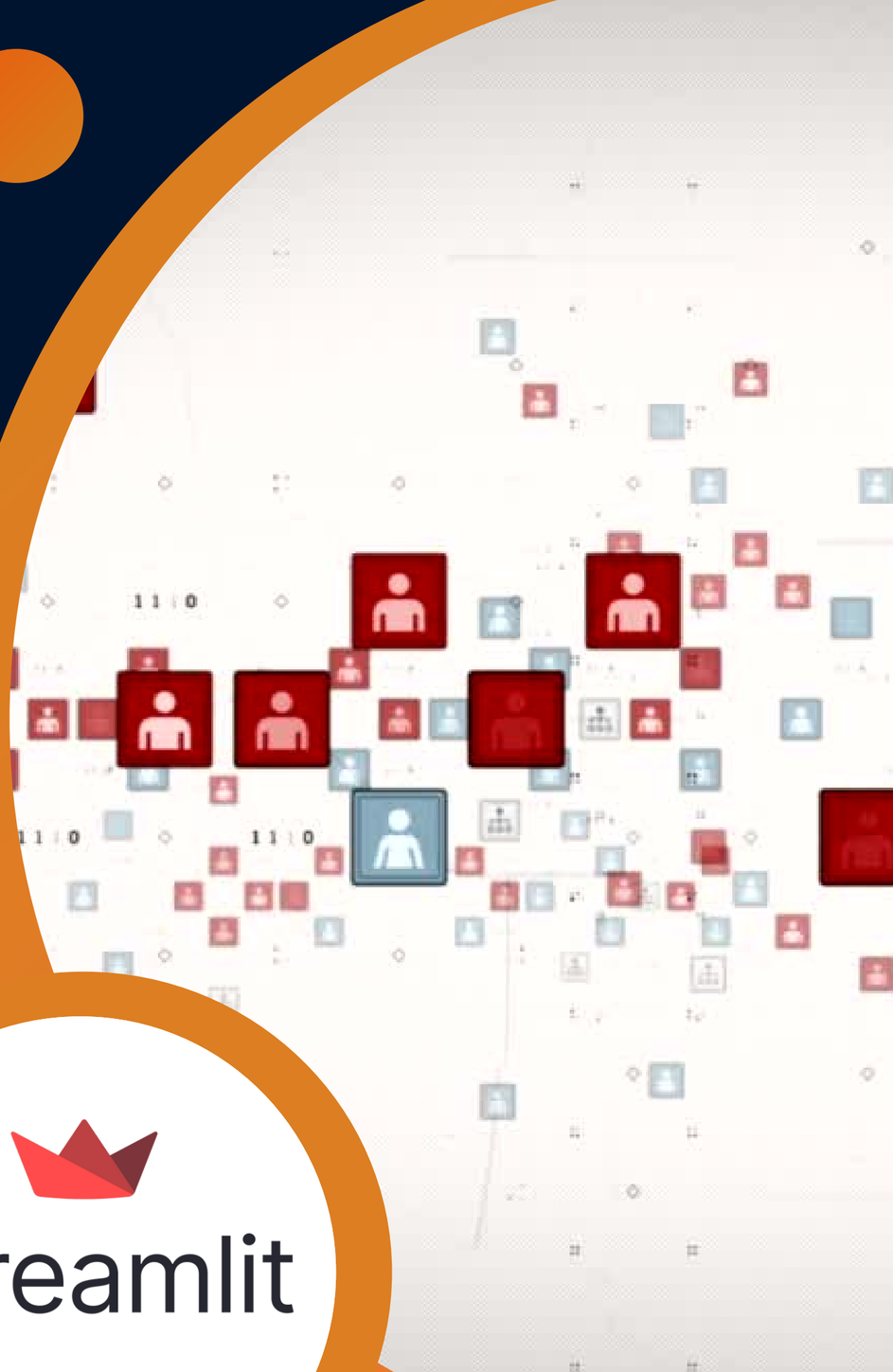
How about a more visual example?

Our expert team will guide you through our interactive platform (Streamlit app) where we'll unveil the insights gained from advanced classification methods



we will be back here soon

Streamlit

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Our Targeted Strategies to Reduce Employees Churn

Clear Career Paths

Work-Life Balance

Recognition and Rewards

Employee Development Programs

Competitive Compensation

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Conclusion

- Our analysis of employee churn has provided valuable insights into the factors influencing turnover.
- By addressing key issues such as work-life balance, career development, and communication, we can proactively:

Reduce turnover

Fostering a more engaged

Resilient workforce

- Also, by implementing the targeted strategies, we can enhance:

Employee retention and satisfaction

Foster a positive workplace culture

long-term success of our company

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Thank You
For Your Attention

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