Report

Backorder prediction

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1.Introduction

A backorder is an order that cannot be fulfilled at the given time due to lack of supply or the product being out of stock. A backorder prediction system can help optimize planning at different levels, avoiding unexpected burden on production, logistics, and transportation.

2.Business Problem

The primary goal of all companies is to increase the demand for the products they offer. Having a poor sales forecast system could be one of the reasons for failing to predict the demand. Despite having a good sales forecasting system, sometimes these situations are inevitable because of factors that can't be controlled or unpredictable events.

3.Existing Solutions

Companies predict the backorders of products by applying machine learning prediction processes to overcome the associated tangible and intangible costs of backorders. Machine learning models may misclassify many records if the dataset contains misleading or missing information.

4.Exploratory Data Analysis

The research shows how this model can be used to predict the probable backorder products before actual sales take place. The mentioned methods in this research can be utilized in other supply chain cases to forecast backorders.

5.Handling Class Imbalance

The research lists major probable backorder scenarios to facilitate business decisions.

6.Feature Engineering

The research shows how to leverage ERP systems to produce a lot of data (mostly structured) and also would have a lot of historical data. If this data can be leveraged correctly, a predictive model can be developed to forecast the backorders and plan accordingly.

7.Performance Metrics

The research shows how to handle class imbalance and evaluate the performance of the model.

8.Modelling and Evaluation

The research shows how to handle class imbalance and evaluate the performance of the model.

9.References

1. [Backorder Prediction. Predicting Backorders using Machine Learning](#)
2. [Prediction of probable backorder scenarios in the supply chain using machine learning algorithms](#)
3. [Backorder Prediction - apps.dtic.mil](#)
4. [Backorder-prediction: Back-Order prediction - GitHub](#)