



CASE STUDY

HELPING MANAGERS TO PREDICT THEIR SALES WITH AI

ROSSMANN

Company Info

Name: Rossmann

Location: Burgwedel, Germany

Industry: Drug Chain Store

ROSSMANN STORE SALES FORECAST.

“For me it is also important not to give up too early”.

Dirk Rossmann

When a company owns over 3,000 drug stores in 7 European countries, sales predictions are not easy. There are so many factors to consider! From seasonality and locality, to holidays and store type, to competitors and promos. How to select the important ones and model their influences?

This was the task that Dirk Rossmann GmbH, Germany's second-largest drug store chain, decided to attempt to bolster its performance.

Rossmann has historically solved this problem by asking its store managers to predict their daily sales for up to six weeks in advance. However, with thousands of individual managers predicting sales based on different factors, the accuracy of the results usually vary greatly.

So, the company decided to try a more uniform approach through the use of the huge amounts of data that they had accumulated throughout the years. Following this, they assembled a dataset containing historical sales data from 1,115 Rossmann stores.

“A task that could have taken days and probably indefinitely delayed was completed in an afternoon.”



LogicPlum's New Approach

LogicPlum's platform is a software system to utilize the latest and best of AI and neural networks. It does this task by automating a search while trying hundreds of possible solutions and selecting the most efficient one. Through this approach, new methods and tools are included continuously, permitting to solve new problems and update and improve previously found solutions in a short time.

With this in mind, LogicPlum's data analysts agreed to answer Rossmann's implicit question: is there an algorithm that can outperform the work of thousands of well-trained managers?

Examining the Data

LogicPlum's analysts took a look at the data available.

The first thing they noticed was the lack of weather-related information. The team considered adding a set of measurements and decided to include two features, namely, maximum temperature and millimeters of precipitation. Secondly, they observed that the value ranges appeared to vary quite a lot.

The team doubted that sales could be predicted. The dataset needed serious work. ***"However, we decided to leave it to the platform because we knew it could handle difficult problems,"*** explained one of LogicPlum's data scientists.

Finding the Solution

The team prepared a CSV file with the data and dragged and dropped it into the platform. The platform then tried and ran over 500 random models and calculated each of them' validation error. The error measure used was the Root Mean Square Percentage Error (RMSPE), which shows how close a set of points is to a regression curve.

The platform found a solution that scored less than 10% root mean square percentage error after working on the data. ***"It was an ensemble of ten models. Each model was obtained through the same algorithm but using different feature subsets. The platform had combined them by using the harmonic mean,"*** continued the data scientist.

For the team, it was another accomplishment. In the beginning, they had struggled with the data. LogicPlum's platform showed them that, as Dirk Rossmann had taught, it is essential "not to give up too early."





Packaging the Solution

The team now had to create a final product that someone could use without the necessary expertise in AI or neural networks.

"The task was highly simplified by using of LogicPlum's platform. First, our software engineers created a front-end that connected to the model via our single point API. Then, they proceeded with creating an AI-generated report, which included information about the data and the methods used, and the models considered", added the data scientist.

Then he explained: ***"This is the most important advantage of using an automated AI platform, such as LogicPlum's. A task that could have taken days and probably indefinitely delayed was completed in an afternoon."***

Finally, he best stated: ***"Companies like Rossmann, who embrace AI tools, are moving faster and outperforming those who don't. And what is more impressive is to see that this competitive advantage applies regardless of size. Nowadays, we can see small players using AI, who are outperforming and taking market share from the big guys"***.



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