

About Us

Jemin.ai make digital twins that model and understand the real world in fine detail, because we realize that everything and everyone is unique. Since 1988, our AI experts have been building digital twins of the real world using neural network Artificial Intelligence. This example is based on work we did for a chain of hardware stores.

Business Analysis

Some stores in a retail network perform better than others. By building a digital twin of the retail network, it is possible to understand what drives performance. The twin can be used to identify opportunities for improvement and decide on the location of a new site. The technique can be applied to other branch networks, from police stations to vending machines.

Data Design

As with all digital twinning, the first task is to frame the question in a way that artificial intelligence can answer. This usually comes down to identifying how data can be broken down into comparable units and understanding what drives the differences between them. In a branch network, the comparable units are the branches themselves. One or more performance measures are then assigned, such as profitability, and driving factors such as size, footfall, product mix. A data table is then designed with each row being a branch and the columns being the performance measures and driving factors.

Data Sourcing

Data must be combined from various sources. Some, such as profitability and product mix, will be available in-house. Other data, such as footfall and local income averages, must be obtained from external sources. Very often, the data will have to be aggregated to be meaningful. For example, individual transactions may need to be totalled or averaged.

Cleaning & Filling

Data is rarely clean on arrival. Some will be missing, but can be interpolated or even estimated as a digital twinning process in its own right. Data will also be subject to errors, noise and known exceptional circumstances. While artificial intelligence techniques can identify many exceptions, charting the data and eyeballing it is often the easiest solution.

Data Mapping

The last data pre-processing stage is mapping. Text data must be converted to categories. Highly skewed data must be squashed so it is more evenly distributed. Other data must be normalized to ensure the rows are directly comparable, for example converting rent and square meters to rent per square meter.

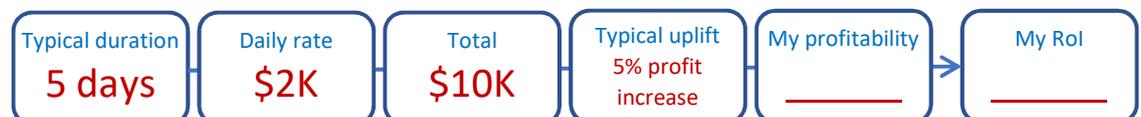
Build Twin

Finally, the AI is ready to do its work. Our neural network algorithms, which we have perfected over three decades, excel at extracting insights from real-world data, no matter how ugly and ill-conditioned. Not only do they create the digital twin itself, they also create a triplet, the digital twin of uncertainty, allowing error bars to be placed around all predictions.

Delivering Results

Once the digital twin is built, it can be interrogated: What product mix is right for small stores in high-income areas? What would the profitability be if we opened a store here? Why is that store much more profitable than expected – what factor have we not accounted for? How much stock should be sent to that store this week? The twin can even be exported as a C++ or Excel function for embedding.

Return on Investment



Contact

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