

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 expense processing in an accounts department.

Business Analysis

The temptation to commit fraud is substantial when submitting accounts. It is free money. Even innocent errors incur loss. By building a digital twin of the expected accounting claim, anomalous claim items can be highlighted. The technique can be applied not just to expense claims but other accounts such as tax returns and tax claims.

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 accounts analysis, the comparable units are the account claims themselves, either across many individuals or a single individual over time. Target values are then assigned, usually expense by type, and driving factors such other expenses, activities being claimed, cash vs card and employee pay level. A data table is then designed with each row being an account claim and the columns being performance measures and driving factors.

Data Sourcing

Data must be combined from various sources. Some, such as accounting numbers and employee information, will be available in-house. Other data, such as Newcomb-Benford probability, need to be derived from the raw data.

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 data is weighted by value. For example, focusing on an errant lunch claim but missing a business class flight purchases that was later refunded would defeat the object.

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. In forensic accounting, the focus is to quantify anomalous behaviour, minimizing the number of accounting entries that need to be queried.

Delivering Results

Once the digital twin is built, it can be interrogated: Which accounts do not look quite right? What activities are hard to monitor, giving rise to the greatest uncertainty? What characterizes people who might be tempted to commit fraud? The digital twin can be exported as a C++ or Excel function convenient analysis of new contracts.

Return on Investment



Contact

jemin.ai 320 City Road, London EC1V 2NZ, UK
Sales: *Richard Hoptruff* email *rg@jemin.ai* phone *+44 20 7127 0605*