

INSIGHTS

INVESTMENT



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Separating Myth From Reality in AI

Human input needed to avoid spurious correlations

Discussions about how artificial intelligence can be used in asset management have become fashionable if not overheated. AI and related technologies such as machine learning have demonstrated success in applications ranging from self-driving cars to chess to speech recognition, so it is natural to ask how they could be applied to asset management.

But the fact of the matter is that the question has been asked — and answered — for years at Capital Fund Management (CFM), a global asset manager founded in 1991 that uses quantitative and systematic techniques to implement trading strategies and manage client assets globally.

“This sudden interest is in many ways puzzling to us because we feel AI is merely a natural evolution of what we have been doing for 28 years,” said CFM’s Laurent Laloux, chief product officer. “We’ve always tried to use the most up-to-date techniques to analyze ever-growing volumes of data and identify opportunities. These techniques have included statistical modelling in the 90s, which was normally the preserve of the academic lab, electronic trading in the early 2000s and AI techniques today.”

CFM’s response to investor interest in AI — and the current hype surrounding it — is to strike a middle ground, providing a research and science-based answer.

“Don’t expect AI to be a complete change of paradigm in finance right away,” Laloux said. Instead, he pointed out that it is one technique among many that CFM uses in data analytics and trading platforms, and requires hard work, commitment and deep experience in the science of machine learning. Also essential is a deep understanding of capital markets and the experience to know where AI could help and where it could hinder.

THE PROMISE

Artificial intelligence was first coined in the 1950s along with a rush of research to develop learning machines. With limited progress, the AI winters in the ‘70s & ‘90s saw a drop in funding and a slowdown in progress. But with a dramatic increase in computing power through the 2000s

and greater availability of data and code through the open source community, AI has become one of the hottest topics this decade.

According to Laloux, while “AI is currently more an evolution than revolution” in asset management, it does bring with it new capabilities.

“We can create models using AI techniques that allow us to capture regularities in the data that humans would otherwise have a hard time noticing,” he said.

It has this ability, Laloux argued, because modern AI models are better at grasping patterns than traditional statistical tools. “That’s why people are very excited by this new technology,” he said. “We also have the computing power and data we can leverage to make it successful, that is what is really new nowadays.”

THE PERILS

AI is in the news and on our computers: The open source community has made access to the technology straightforward, and the cost of entry is low. In the past, analytical techniques might have remained in university labs or been limited to scientific journals. Today, anyone who is computer savvy can access AI code and try to apply these techniques to asset management. However, they are likely to find success elusive.

“The danger is that AI will find spurious correlations that don’t exist, like the production of butter in Bangladesh being correlated with S&P 500,” Laloux said. AI may produce a seemingly successful system on historical data, but it can break down when it goes live in the real world because it just has been fitting bogus correlations into the data.

An underlying problem comes back to data. “In most cases we don’t have enough high-quality financial data,” Laloux said. Financial markets are also highly efficient, meaning prices are close to random with very little information left in them for an investor to leverage.

The solution is better data, but also the use of a human

expert who understands financial markets. Such an expert can challenge the algorithm and check to see if the results are meaningful in economic terms.

“Is this a spurious correlation or can I explain in reasonable terms what the algo is finding and safely put it to work in the market?” Laloux said. “You need the human expert in the field to apply successfully the AI technique.”

PULLING IT ALL TOGETHER

Despite these limitations, AI can deliver on many of its promises if used intelligently. AI is well suited for cleaning and preparing data for human analysis. It can find interesting patterns that otherwise would have been missed. Though an expert can challenge AI, AI can also challenge the expert, to go deeper into the data to develop better models.

At CFM, “we use this technology to improve the execution of our trades because the additional analytical power of AI techniques has enabled us to improve our predictive modelling,” Laloux said. CFM has designed a trading execution system for thousands of different stocks in markets with different microstructures, liquidity and economic cycles. The algos of AI are able to classify the data and execute trades in a more systematic way across markets than would be possible by previous approaches.

As Laloux pointed out, CFM has been investing in markets using systematic strategies for 28 years. It deploys data scientists and research PhDs to make sense of what AI is doing. According to Laloux, “you cannot blindly trust the algo and treat it like a black box.” That comes back to some of the risks but also opportunities presented by AI. AI is merely a tool that offers increased analytical powers in certain circumstances, with results dependent on who uses it.

As Laloux said, “being experienced in your field is critical to using the technology safely and efficiently. That’s what enables us to explore, use, and deliver results with AI.” ■

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