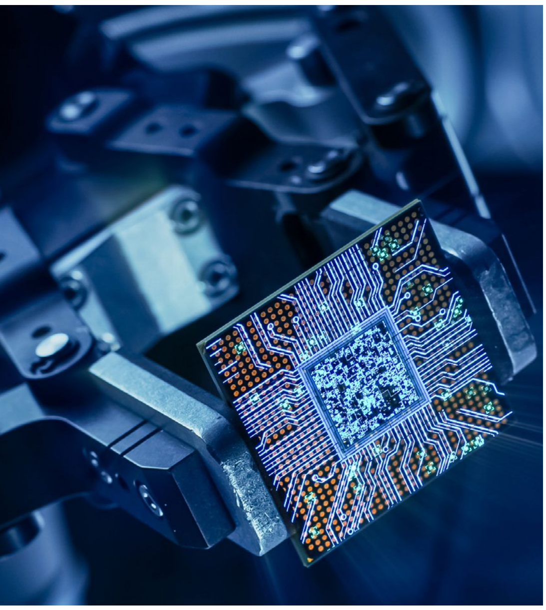
Allianz
Global Investors

IDEAS Connect

Integrating AI techniques in multi-factor investing

In a world where financial markets are driven by vast and ever-growing amounts of data, the quest for a more robust yet refined equity strategy has led many to turn to Artificial Intelligence (AI) as the solution. In this article, we provide an overview of the AI techniques we employ in AllianzGI's multi-factor investing.



From AlphaGo to ChatGPT: The AI journey and its role in investment strategies

AI has quietly embedded itself into our lives, from YouTube's translated subtitles to TikTok's personalised recommendations. Although it made headlines in 2016 when AlphaGo defeated Go champion Lee Sedol, AI still felt distant for most. This perception shifted with ChatGPT's release in November 2022, capturing the public's attention as it amassed one million users in five days and 100 million within months. The AI momentum hit Wall Street when Nvidia, a key player in AI hardware, saw its stock surge to a record high amid an AI chip frenzy. These events sparked some soul-searching as individuals and businesses began to reconsider what AI could actually achieve for them.

AllianzGI Systematic Equity team: Mastering AI and Machine Learning for 25+ Years

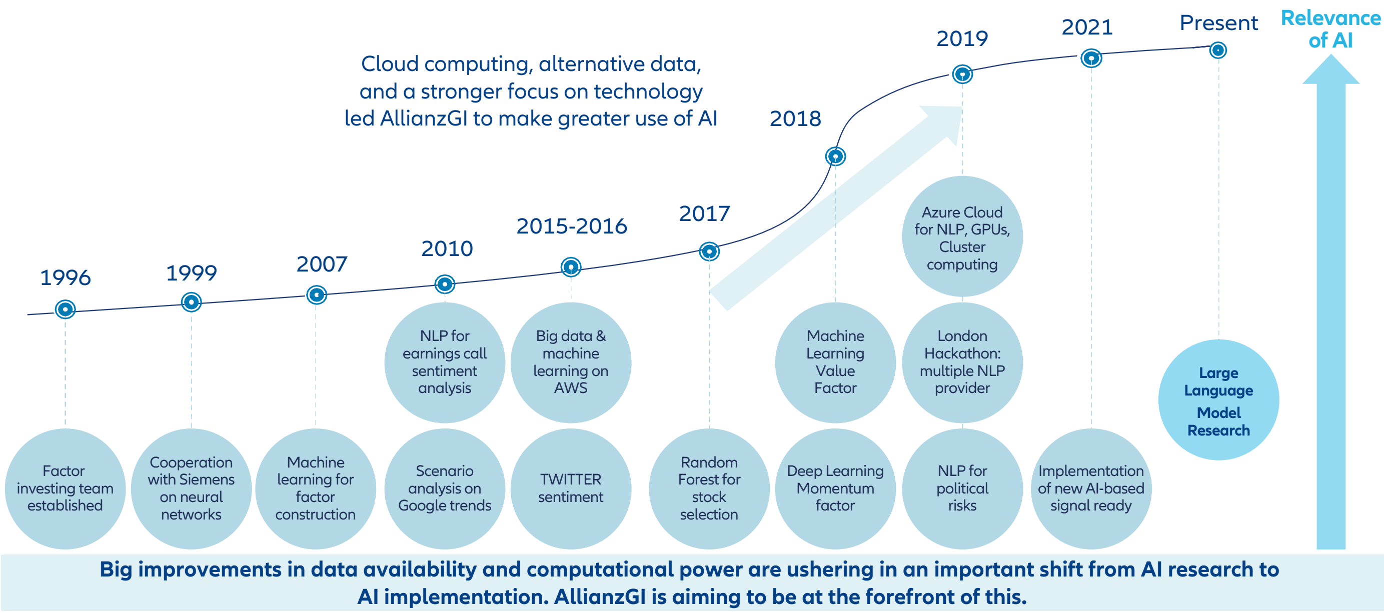
Although popularity of AI has surged in recent years, the Systematic Equity team at Allianz Global Investors has been at the forefront of integrating these techniques into their work. For example, we leverage AI tools like Databricks Assistant and GitHub Copilot to automate documentation and prototyping, significantly accelerating our signal testing. Our transition from on-premises hardware to scalable cloud computing has further boosted flexibility and efficiency, putting cutting-edge AI techniques at our fingertips.

Beyond streamlining workflows, the team has a long-standing history of researching AI-driven signals, as illustrated in Exhibit 1. During the past 25 years, from statistical learning to the era of Large Language Models (LLMs), we have continuously advanced in this journey. Consequently, the Systematic Equity team's multi-factor investing, has integrated AI signals for years. Building on this foundation, we also launched an AI-powered equity investment approach in November 2021, leveraging proprietary AI-driven signals to unlock alpha potential. The commitment to innovation ensures we remain at the forefront of the rapidly changing landscape of investment management.

Dr. Jörg Hofmann
Director of Quantitative Research Systematic Equity

Tianxiao Fan
Product Specialist
Systematic Equity

Exhibit 1: AllianzGI Systematic Equity team: AI and Machine Learning for 25+ Years



Source: Allianz Global Investors, Systematic Equity team, December 2024. For illustrative purposes.

Today's rapidly evolving technological landscape offers a variety of advanced techniques. Among the many we have explored and researched, we have identified several promising AI-driven signals as outlined in Exhibit 2. These signals employ cutting-edge AI methodologies: for example, Earnings Call Sentiment extraction and change detection in Company Filings leverage NLP techniques, while Deep Momentum utilises Artificial Neural Networks (ANN). These signals help us uncover insights from unstructured data and enhance our investment strategies.

Many terms related to AI can feel intimidating, and the algorithms behind them are often quite complex. In a series of papers, we will take a closer look at key methodologies, such as Natural Language Processing (NLP) and Random Forest, among others, as outlined below.

Exhibit 2: Artificial Intelligence application: AllianzGI's multi-factor investing, enhanced!

AI methods	Application	Live since
Earnings Call Sentiment	Positive earnings call sentiment greatly improves the performance of our Revisions factor	2017
NLP Analysis of Company Filings	Stocks with substantial changes to the risk sections in 10-k filings are de-emphasised	2020
Deep Momentum	Deep Momentum, our Momentum factor constructed by a Neural Network, is handily outpacing our traditional Momentum factor	2019
Hedge Funds Holdings	Emphasising stocks favored by skillful hedge funds managers, de-emphasising highly sorted stocks	2014
Random Forest	The random forest score drives the stock selection within our investment styles	2018
NLP Sentiment Analysis of Analysts' Report	Often, a gradual worsening in broker sentiment precedes earnings misses, hence analysing the sentiment in broker research gives us an edge.	2018
Earnings Growth Prediction	Dynamically deducing growth perspectives from company characteristics	2024

Source: Allianz Global Investors, December 2024. For illustrative purposes only.

November 2025

ADM-4961145