

MumbaiIntroduction

My name is Akash Anand, Senior Executive in BFSI & Fintech Domain with 3 decades experience across global markets.

I feel quite privileged for getting shortlisted and selected by ADGM & CFTE for the Scholarship program which I utilized quite well to learn from Industry experts and faculty. I had successfully completed the following courses:

- Big Tech & Financial Services
- Building Blocks for Tech in Finance
- Leading yourself and others in Finance Technology
- The Entrepreneurial Mindset
- Applying the basics of customer and user experience in financial services
- Operationalising Data Science & AI
- Join the Fintech journey for Senior Leaders
- Opportunities and Threats in RegTech
- Human-Centered Design-The key to creating successful products & services
- Introduction to RegTech Compliance
- What is FinTech

Although each of these courses were quite insightful for me but as part of this essay I would like to write about Investments & Wealth Management and how AI & Data Science is changing the entire landscape of the business.

Essay: Artificial Intelligence & Data Science in Investment Management Industry

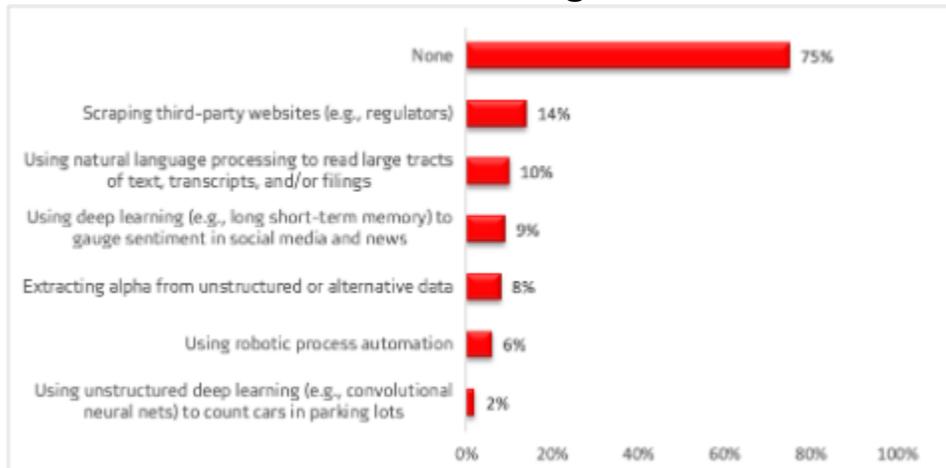
Artificial Intelligence (AI) and data science applications in the investment management industry globally has risen rapidly over the past few years. The democratization of data, enabled by technology, has given rise to this proliferation, strengthened by the growing sophistication of behavioral analytics.

Applications in investment management rely on several major techniques. In the case of natural language processing (NLP), computer vision and voice recognition programmes, AI is used to capture text, audio and imagery from a variety of public sources and internal/vendor databases. This includes transcribing analyst conference calls and extracting data from issuer filings for valuation models. In recent years, the popularity of AI in general – and that of machine learning (ML) specifically – has surged in both practice and academia. Machine learning is concerned with using data progressively to adapt the parameters of statistical, probabilistic and other computing methods and algorithms that allow machines to uncover patterns without explicit programming instructions. Deep learning (DL) is a type of ML that is based on artificial neural networks (a type of learning modelled on the human brain). DL algorithms are often applied to improve the results of NLP, computer vision and voice recognition programmes. They can also help extract useful information from large piles of data for analysts and portfolio managers to process. For example, these algorithms can infer certain key words from conference call transcripts or identify sentiment from unstructured data, such as social media. AI techniques can be used in fundamental bottom-up research to identify key themes driving narratives and potentially the current market valuation or identifying changes in the tone and strategy of company management, for example. However, ML and DL applications tend to be popular with quantitative (systematic) managers who often find it helpful to apply these techniques to improve the effectiveness of their quantitative processes.

Using big data for industry and company analysis is more popular than using AI or ML techniques among investment professionals. Asset managers are looking to big data to help them drive high-quality outcomes so that they can invest more effectively in their core activities. Data scientists define big data with the following four Vs: volume, variety, veracity and velocity. The terms often used in the investment circles are alternative data or unstructured data. Alternative data refers to data from sources that are not currently used or not yet mainstream. In comparison with structured data, which is data that is digitised and stored in relational databases, unstructured data refers to data that is often in text, image or voice formats and are not readily processable. Examples of alternative data and unstructured data often used in the investment world today, include satellite images, earnings conference call recordings and transcripts, social media postings, consumer credit and debit card data, and eCommerce transactions. In a way, extracting signals from big data is simply an extension of what a retail analyst would do – visiting stores to analyse customer traffic, merchandise and so forth. Now asset managers use satellite images or sensor information of the parking lot to infer the same information. The new techniques offer efficiency gains; an analyst can cover a lot more stores in much less time using satellite imagery or sensor data. Alternative data tends to be niche and is more popular with fundamental managers running discretionary portfolios who use these data as one input in the investment decision-making process.

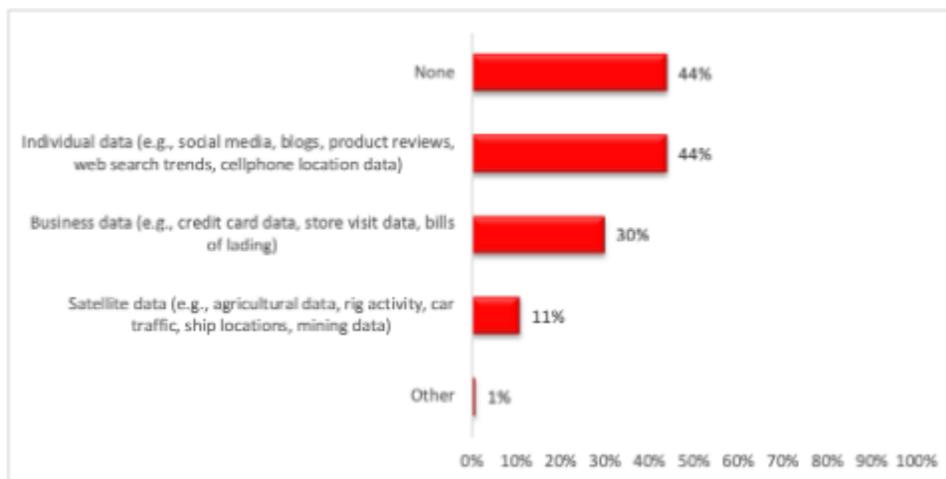
According to research from the CFA Institute, investment professionals globally are using AI and data science techniques for industry and company analyses in the following ways:

Artificial intelligence



Source: CFA Institute, *AI Pioneers in Investment Management Survey, 2020*
Note: Survey participation (N = 159)

Data science



Source: CFA Institute, *AI Pioneers in Investment Management Survey, 2020*
Note: Survey participation (N = 159)

Conclusion: We are at early stages of adopting AI techniques and related technologies, and a few investment professionals currently use big data applications in their daily investment processes. Overall, given the low usage of AI and big data techniques, coupled with the large number of data scientists entering the investment industry, it is reasonable for asset allocators to expect to embrace a growth in modern approaches to investment decision-making.

The effects of the COVID-19 pandemic ushered in a new era in March 2020, as traditional models failed in the systemic economic shifts caused by the pandemic, and alternative data came into play as a provider

of real-time data to derive insights for immediate action. This change triggered an interest in using AI and alternative data to both increase signal accuracy and generate a competitive edge as asset managers reset their strategies. Asset managers realise that inputs and data should not include only structured data like the clean time series such as prices, PE's or economic indicators. To gain an edge, the current development or implementation in the investment industry has increasingly been predictive models using unsupervised learning to understand data structure, supervised learning algorithms for prediction and reinforcement learning to learn actions. Another popular technique is the use of neural network architecture taking in price data such as FX, equity indices, yields, commodity prices and so forth. Using the most efficient search technologies such as cloud and/or distributed scaling, global traffic congestion monitoring, real-time inflation trackers and using deep learning to gauge sentiment on social media and the news are also some techniques that are gaining popularity in increasing the predictive power of models