Data Science Notes

Barclays Research's Data & Investment Sciences blog, where we dive into some of the frequently asked questions about data science and how it is reshaping investing.

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How to hire 'investment scientists', applied users of data science

Investment Sciences
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If you want to use data science (DS) for investing, people who can bridge the gap between pure data science and traditional investing will multiply your impact. In this blog, we examine the role of the 'Investment Scientist', who provides a bridge between DS and traditional investing roles.

What is an 'investment scientist'?

- **A bridge between two domains.** If Data Scientists are the technical leads, the Investment Scientist role is the business or product lead. They facilitate making the most complimentary combination of both investment research insights and data science techniques by operating across both domains.
- **They work best if they are also analysts in their own right.** One important role is acting as translators between data science and fundamental investment. But that works best when they are able to take ownership and generate their own investment ideas, too. That makes creativity with research ideas, comfort with data science techniques, and agility in assessing potential research projects the key skills for Investment Scientists.

What experience or skills to look for?

The foundations tend to be similar to those of data scientists

Investment Scientists tend to have the same background and training as Data Scientists: degrees in quantitative disciplines such as physics, economics, engineering or the like. On our team, most members have advanced degrees in these fields.

Experience in building investment theses

Leveraging data science and alternative data does not change the core aim of investment research: building robust investment theses. The best investments scientists have their own views about how to structure an investment idea and what empirical evidence is most compelling in supporting (or invalidating) the thesis. They also need to be able to collaborate with domain experts and bring valuable intuition on the relative merits of datasets and projects. In practice, most of our Investment Sciences team has worked in a traditional investment research role, though there is a mix of those who have come from fundamental, strategy, and quant approaches.

Communication, communication, communication

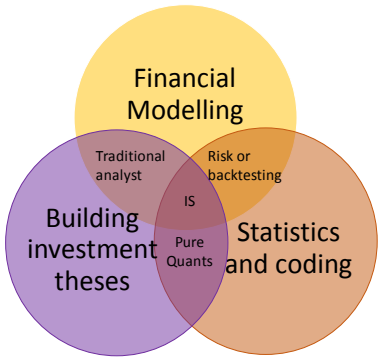
For novel and advanced methods to become embedded in existing investment research practices, it is necessary to communicate their benefits to audiences of varying technical backgrounds. In practice, our Investment Scientists spend a lot of time helping data scientists understand the intuition behind investment questions: why we care how many people are visiting casinos or getting elective surgery or posting particular jobs. On the other side, they also help fundamental researchers understand the strengths and limitations of data science: for example, when geolocation data gives a useful insight even after considering its inherent uncertainty, or why correlation is not the same as causation. The investment scientists also help frame our work directly to clients across the spectrum, from those making discretionary decisions based on fundamentals, to others who are interested in integrating new data into systematic processes.

Not all data roles are equal

Many roles within the investment community incorporate heavy use of data, but are those people well suited to Investment Scientist roles? There are no hard and fast rules, so candidates from a range of backgrounds could be suitable. In Figure 1 we show some of the skillsets within different data-led investing roles. We contrast with Figure 2 the traditional skillsets of a Data Scientist, with the difference not just being in financial modelling but also in their approach to building an investment thesis.

FIGURE 1

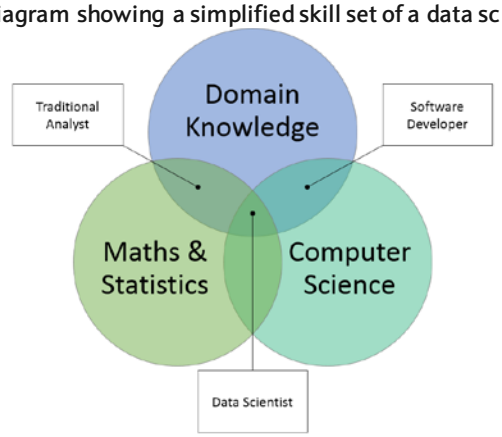
Venn diagram of skillsets for an investment scientist



Source: Barclays Research

FIGURE 2

Venn diagram showing a simplified skill set of a data scientist



Source: Barclays Research

Data scientists and investment scientists on our teams both speak the language of math and computer science, and both share a common goal: to produce impact by developing our understanding of the world. They tend to differ in their approaches to doing that. While data scientists often approach the problem by applying the tools and methods of data science to answer otherwise unanswerable questions, the thinking process of investment scientists is rooted more from their rich domain knowledge. When the two collaborate, we end up with the best of both worlds.

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