

## Are the Robots Really Taking Over?

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### Central Issue of the Paper

Artificial Intelligence...Machine Learning...Big Data... all of these are popular buzzwords that seem to appear everywhere, from investor presentation decks to conversations with people who believe the robots are coming for us. But, what exactly is A.I.? What are the ramifications? Should we be scared or unimpressed? In their article “Artificial Intelligence,” Frank Beham, CAIA, Roberto Obregon, CAIA, Edmund Walsh, and Timur Kaya Yontar attempt to break down some of these big concepts for our readers and explain how A.I. and Machine Learning might augment the investment profession.

### Approach Employed by Paper

*What Are A.I. Tools?*

Let's start off with what Artificial Intelligence (A.I.) is not. Despite a fear that “the robots are taking over!”, many people might not realize that A.I. is not an “all-knowing machine with superhuman powers.” In fact, A.I. can be pretty mundane in many cases. According to the authors of this paper, A.I. tools can really be classified into three pillars:

1. Data Generation – A.I. can be used to generate and quality-control data into a pipeline
2. Measurement – After data has been collected, A.I. can be used to measure and analyze it
3. Decision Making – A.I. can make informed decisions from collected and measured data

While these tools might be great on their own, it is likely that A.I. tools in practice will utilize a combination of these three pillars at different levels of complexity. For example, take the paper's example of an A.I. tool being applied to the Capital Asset Pricing Model (CAPM), a rather universally known investment concept. Using the framework above, the first pillar aggregates and scrubs the data, the second measures the data, and the third could use this data to make a buy or sell recommendation on an individual security. Not too complex, right? This is a relatively simple example, and the paper goes further in depth on A.I. applications and techniques.

## *How Will A.I. Impact My Investments?*

By comparing the EurekaHedge A.I. Hedge Fund Index to a broader collection of hedge fund indices, the authors show that hedge funds using A.I. have outperformed those that do not. Similar to traditional hedge funds, A.I. hedge funds experience high levels of dispersion. Why is this? Well, while many might imagine that A.I. is commandeering the decision-making process for all A.I. hedge funds, that's not necessarily the case. Software like this can be used for multiple reasons. For example, non-investment decision making activities such as performance analysis, risk management, or compliance/regulatory oversight can also benefit from A.I. tools.

## *Manager Selection and Portfolio Construction*

While not every allocator needs to be an A.I. expert, it's important for them to understand how portfolio managers use A.I. as part of their investment process. The authors claim that A.I. managers should be put through the same rigorous due diligence process as a traditional or alternative investment manager. Simply put, there are three key things an allocator should understand: 1) how the manager implements A.I., 2) how the manager benefits from the three pillars of A.I. tools (mentioned above), and 3) the interpretability of the strategy, investors shouldn't accept a black box or a process they cannot understand.

From a portfolio implementation standpoint, A.I. can also add enormous value. While A.I. can add incremental value at the manager level, it can add tremendous value at the asset class and cross-asset class level. Similar to the manager selection process, the authors believe there are three key components to successful A.I. implementation at the portfolio level, and each of these build upon one another. According to the paper, investors must do the following in order: 1) build a strong data infrastructure that keeps needs and goals of A.I. in mind, 2) begin using A.I. within the risk management process to identify risk exposures and drivers, and 3) fully incorporate A.I. into the investment process once the first two steps have been used successfully.

## **Findings of the Paper**

While the robots haven't taken over yet, A.I. is quickly being utilized in many aspects of the investment process. In fact, *not* using A.I. might actually represent a risk in itself...those who don't might be left behind from a return standpoint. The authors conclude their paper with five key advantages for using A.I.:

1. It improves efficiency of current resources
2. It broadens the scope of risks and opportunities
3. It depends on the level and speed at which opportunities can be analyzed
4. It provides a big picture view of risks and opportunities that institutional investors already consider
5. It augments the human experience and insight into the world of investing

As larger asset management firms continue to implement A.I., allocators and institutional investors will have to educate themselves on how the technology works, at the very least. From asset allocation to the manager selection, A.I. is already upon us.

