Increased Demand for Artificial Intelligence Brings Additional Responsibilities

Scott Zoldi

Biography

Dr. Scott Zoldi is chief analytics officer at FICO (https://www.fico.com). While at FICO, Scott has been responsible for authoring 110 authored patents, with 56 granted and 54 pending.

Scott is actively involved in the development of new analytic products and Big Data analytics applications, many of which leverage new streaming analytic innovations such as adaptive analytics, collaborative profiling and self-calibrating analytics.

Hecott serves on two boards of directors, Software San Diego and Cyber Center of Excellence. Scott received his Ph.D. in theoretical and computational physics from Duke University.

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Abstract

A new report[1] published by FICO and Corinium has found the demand for AI, data, and digital tools has soared in the wake of the COVID-19 pandemic. Research of more than 100 C-level data and analytic executives, reported in Building AI-Driven Enterprises in a Disrupted Environment, has put the spotlight on ethical considerations which represent a significant barrier to AI adoption. In this article, the author looks at the pillars that need to be built to address this challenge.

Introduction

As the pandemic continues to put a strain on many enterprises, demand for data, Artificial Intelligence (AI) and digital tools is soaring. To understand how organizations are developing and deploying AI capabilities, FICO sponsored research. The timing of the study, conducted by Corinium in the midst of the COVID-19 pandemic, threw the spotlight on new challenges faced by many businesses – and an increased move towards AI to address them.

In particular, the study found that the uncertainties caused by the pandemic have forced many organizations to adopt a more committed, disciplined approach to becoming an AI-driven enterprise, with more than half (57%) of the chief data and analytics officers saying that COVID-19 has increased demand for AI, digital products and tools. Enterprises are seeking new AI-driven ways to mitigate risks

and navigate through uncharted territories in the current economic environment with the report revealing the central role AI has in shaping the future.

Organizations rally to add AI capacity

Most data-driven enterprises are now aggressively investing in their AI capabilities. In fact, 63% of respondents said they have started scaling AI capacity within their organization. However, it appears there are a range of barriers that need to be overcome, with 66% saying building a team with the right skill set is a particular hurdle. The integration of new technology with legacy systems presents a challenge for 62% and the regulatory and compliance risks are a consideration for 60%.

But probably the biggest barrier is the ethical use of AI. More than 93% of respondents said that ethical considerations represented a barrier to AI adoption within their organizations. Therefore, as highlighted in the report, "ensuring AI is used responsibly and ethically in business context is a huge, but critical task."

Half of the survey respondents said they have strong model governance and management rules in place to support ethical AI usage, making this the most common approach to tackling the challenge. However, more work is needed to ensure ethical AI usage as 67% of AI leaders admitted they don't monitor their models to ensure their continued accuracy and ethical treatment.

Responsible AI

AI is no different from any other business system; it needs to be built on strong foundations, monitored, tweaked and upgraded to ensure best practice. Three pillars – explainability, accountability, and ethics – establish standards and give organizations the confidence that they are making sound and responsible digital decisions.

Figure 1: Responsible AI
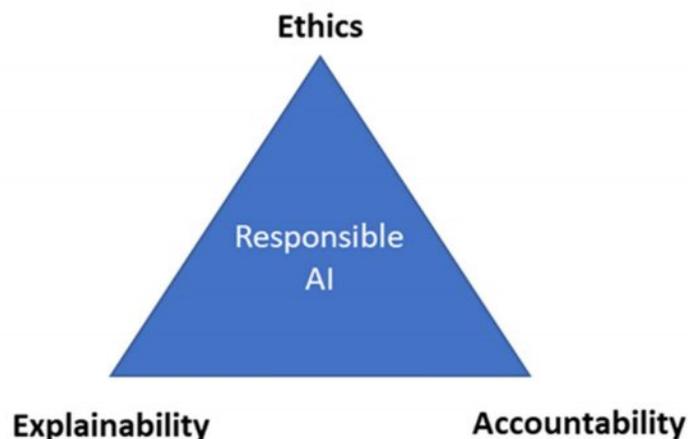
Source: FICO

- **Explainability –** AI decision systems need to allow a business to explain why the model made the decision it did – for example, why it has flagged a transaction as fraud. Human analysts can then further investigate the implications and accuracy of the decision. A detailed explanation of the drivers of the score ensures the decision is understandable, reasonable and satisfactory – for both the organization and customer. In addition, it allows for an error made by the customer providing data or the AI system itself, to be rectified and reassessed. This potentially will result in a different outcome.

2. **Accountability** – Technology must be transparent and compliant. Algorithm limitations must be accounted for and algorithms carefully chosen to create reliable machine learning models. Accountable development of models ensures the decisions make sense with changing inputs. For example, scores adapt appropriately with increasing risk.

   Part of accountability is the concept of humble AI – ensuring the model is used only on the data examples and scenarios similar to data on which it was trained. Where that is not the case, the model may not be trustworthy and an organization should downgrade to an alternate algorithm or rely on policy.

3. Ethics – Built by humans and trained using societal data, AI can be discriminatory. Explainable machine learning architectures allow extraction of the specific machine learned relationships between features that can lead to biased decision-making. Ethical models ensure bias and discrimination are explicitly tested and removed.

With the pillars of well-defined and standards around explainability, accountability, and ethics we have the foundations of Responsible AI.


Enforcing responsible AI
As data scientists develop their systems, it is vital they enlist external forces to ensure their model continues to deliver responsible AI.

Figure 2: Enforcing responsible AI
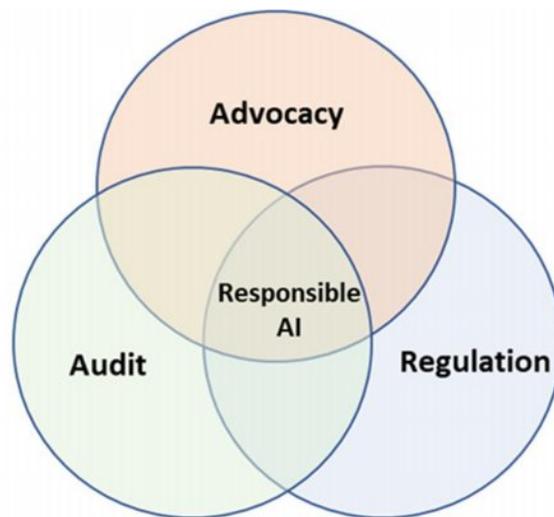
Source: FICO

Rise of advocacy

Public awareness of how algorithms are making very serious life-changing decisions is leading to organized advocacy efforts. Many groups are so concerned about some of the wrong decisions based on AI, they are willing to undertake legal proceedings. This underlines the need for collaboration between advocates and machine learning experts for the greater good of both humans and AI.

Increased regulation

Partly due to advocacy concerns, regulations have been introduced to protect consumer rights and monitor AI developments. Views on regulation vary but, contrary to popular belief, regulation does not stifle innovation but rather apply socially responsible constraints to technology directions.

Without external regulation, there would be no restrictions on, or control over, how organizations could use data and AI. This is a dangerous situation to be in and regulations are vital for setting the standard of conduct and rule of law for use of algorithms to ensure decisions are fair.

Auditable models

To demonstrate compliance with regulation, data scientists and organizations require a framework of corporate standards for creating auditable models and modelling processes. Audits must ensure essential steps such as explainability, bias detection, and accountability tests are performed ahead of model release, with explicit approvals recorded. This creates an audit trail for accountability, attribution, and forensic analysis. Furthermore, as data changes, these same concepts of ethical AI must be retested and verified in the field to continue to use the model responsibly and safely.
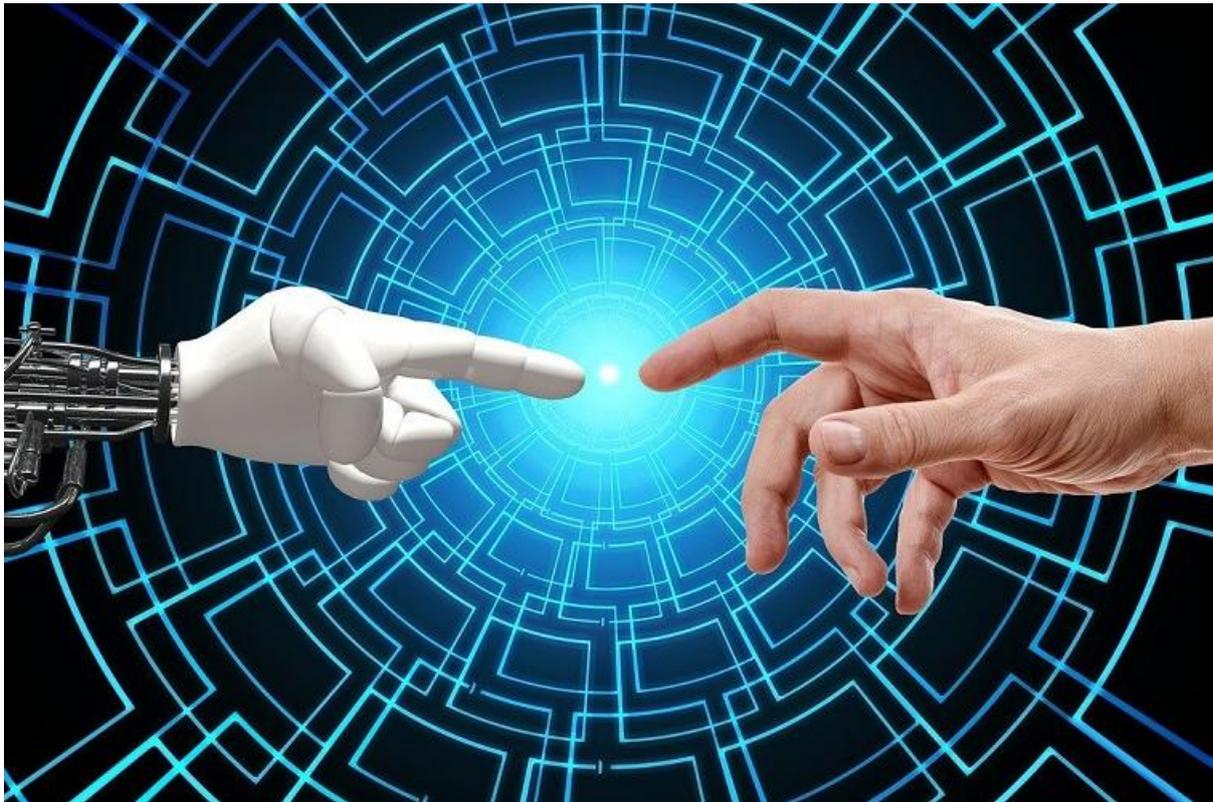
In conclusion – raising the standard

As the use of AI continues to grow across industries, borders and more parts of our lives, responsible AI will be the expectation and standard. However, being ethical is not being blind to what's in the model. Organizations need to ensure that AI is designed robustly and is explainable, transparent, built ethically and governed by auditable, recorded development process that is referenced as data shifts over time.

From better customer experiences and reducing financial crime to automating business processes and improving risk management, respondents to the Corinium research said they believe AI will help their organizations secure a competitive advantage. Organizations must, therefore, enforce responsible AI now and strengthen and set their standards of AI explainability, accountability, and ethics to ensure they are making digital decisions responsibly.

Reference

[1] *Building AI-Driven Enterprises in a Disrupted Environment,* https://www.fico.com/en/latest-thinking/analystpartner-collateral/building-ai-driven-enterprises-disrupted-environment