

ESG Brief

Artificial Intelligence and Analytics Predictions for 2020

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Abstract: This ESG Brief will review some key predictions for 2020 in the artificial intelligence space, from skills gaps and actionable AI to chatbots and natural language processing.

Overview

It's been a head-spinning year in artificial intelligence. Nearly every vendor recognizes the power of AI and has dedicated time, effort, and money to bringing that power to customers. Whether embedded in products, through specialized infrastructure, or through near turnkey solutions that enable organizations to embrace AI on their terms, the wave of AI adoption is just getting started. It's a key reason why professional services and aligning strategic partnerships in specific industries feels like an arms race. The market opportunity is exploding and remains primed for the taking, as organizations need help not only getting started on their AI journey, but also as they continue through the AI lifecycle, from simply integrating data to operationalizing AI at a global scale.

Ten Predictions for AI in 2020

The Last Mile of AI: Deployment

We're already seeing waves of this from certain vendors, but the idea of helping organizations through that last mile of the AI lifecycle—deploying a model into production—will become a focal point for customers and vendors alike in 2020. Here are a few recently collected data points that emphasize the importance of vendors helping customers to operationalize AI:

- 72% of organizations with AI initiatives do not yet have AI in production.
- 44% of organizations investing in specialized infrastructure to support AI initiatives do not expect to see value in their investments for at least ten months.
- Nearly one in four organizations (23%) cite model deployment as the phase of the AI/ML data pipeline that creates the greatest challenge.¹

Why would an organization invest hundreds of thousands of dollars to not see a return on the investment for over a year? Why would businesses waste the time, effort, and money to make it 80% of the way to leveraging AI, and then fall short at

¹ Source: ESG Master Survey Results, [Artificial Intelligence and Machine Learning: Gauging the Value of Infrastructure](#), March 2019.

the end? Simply put, they won't. They'll turn to prebuilt tools, solutions, or applications that embed AI and say, "it's good enough." In the short term, that may work, but in the long term, they'll need to figure out how to better customize AI to their specific business and use case. And to get there, they'll need to solve the AI deployment challenge.

The Persona Conundrum

Recognizing the challenges seen by so many organizations across the data lifecycle, new terminology is being used in the market to address the different personas involved throughout the data and applications lifecycle. DevOps incorporates best practices, tools, collaboration, and automation throughout the development and deployment lifecycle between developers and IT operations. DataOps fills a pressing need to incorporate data-centric roles in that process—data engineers, data architects, data scientists—to communicate, collaborate, and incorporate best practices for tie-ins to analytics workflows and next-generation applications. MLOps goes hand in hand with the first prediction, by addressing collaboration between data science teams and operations teams for AI-based applications in production.

Shifting to data science and analytics, there has been an increased focus on democratizing data access to support all areas of the business. This of course pushes the need for tools that best enable both generalists and specialists to complete their jobs efficiently and effectively. While vendors announce products that seem like the panacea for data democratization, gaps remain when it comes to the entry points and handoffs from one role to another.

Regardless of <insert your term>Ops terminology or who is looking to access what data from what tool using what device, the various and growing number of personas involved in data management and analysis creates a challenge for vendors in how to best position their products and solutions. In 2020, expect vendors to prioritize persona-based marketing from IT operations and developers to data scientists and business analysts.

Fixing the AI Skills Gap...with AI

How do you fill the AI skills gap? With AI of course. It's borderline clichéd to cite the AI skills gap as a preventer in leveraging AI. It's an interesting conundrum: Either you don't have a data scientist, or you do and you're asking too much of them. Sixty-three percent of organizations with AI initiatives underway have personnel completing tasks across different phases of the AI lifecycle that fall outside of their core skillset and responsibility.² And it's forcing organizations to hold back future investments in the technology.

The ironic part is that while both customers and vendors have recognized this challenge, the vendors (who are hiring much of the AI talent) are building tools with embedded AI to solve the problem. This can help two types of roles, both of which need the help. For the non-data scientists like data engineers, data architects, data stewards, etc., advanced tools with intelligent automation will enable them to more rapidly complete their day-to-day tasks, while exposing them to AI technologies with guardrails. For the data scientists themselves, it's more about focusing on their core expertise and enabling better collaboration and repeatability across the AI lifecycle. We've seen it throughout this year, and next year is no different: AI democratization will continue to be desired, emphasized, and embraced.

AI Will Take Action

For those leveraging AI today, the predominant method is to access AI through a product or solution to provide predictive insights. Systems turn to prebuilt AI models that are trained on historical results, analyze real-time data streams, and then alert when something is wrong. Nearly one in three (32%) organizations with AI initiatives underway are using AI as a recommendation engine.³ And IT is a key entry point in this area, whether analyzing log files, managing IT systems,

² *ibid.*

³ *ibid.*

monitoring resources, or orchestrating infrastructure. But simple alerting is the low hanging fruit. In fact, in some cases, it should not be considered “AI” at all since it’s more rule-based automation than AI.

Where AI is going next in this space is taking the appropriate action based on learned behaviors or requirements. Actionable AI will change the way systems are managed, maintained, and provisioned. It will do more than simply provide insight. AI will begin acting to truly enable the next wave of intelligent automation. And while some may consider AI in IT the low hanging fruit, every industry will look to embrace the idea of AI taking action. Maybe it’s a valve automatically turning off, a production line automatically stopping, or a notification directing personnel to allocate more time to a high-value task.

Why versus What

Going hand in hand with actionable AI is ensuring the right level of control and accountability. AI today is used heavily to answer questions like: What is that? What happened? What is going to happen? Using AI for pattern recognition is where we are today (still in its infancy). But organizations need much more information to stand behind an AI-based decision, including understanding the cause and effect of an action taken. Using AI to help users understand the cause and then explain the effect in human terms will significantly advance AI adoption. This of course lands in the realm of explainable AI, where insights derived from AI must be explained to a point where they can be understood by a human. While few technology vendors offer features like this today, in 2020, this feature will become a must-have, especially to advance AI adoption in highly regulated industries.

From the Home to the Workplace

The use of AI assistants has never been higher. It’s becoming more common than ever to leverage NLP on a smart device to answer basic questions or complete basic tasks. Consumers constantly prompt their devices with phrases such as: What’s the temperature today? What’s on my calendar? Tell me about today’s current events. Add milk to my grocery list.

But the shift of this technology to the enterprise is starting and will continue throughout 2020. In enterprise IT, for example, 57% of organizations feel that using NLP to interact with IT systems is good for limited and specific functions like asking to generate a report, while an additional 35% can’t wait to use AI assistant technology, citing it as the way of the future and looking forward to fully embracing all aspects of the capabilities.⁴ The same can be said in analytics, where a new type of end-user with limited expertise will be looking to data to help their specific line of business achieve a data-driven goal. We’re in the early stages where BI platforms let users ask (with voice) a question and get a response. Even with the potential for AI to misunderstand a spoken word or sentence, expect to see expansions of usage and rhetoric libraries for certain industries to ensure a better understanding and reaction to voice commands in the workplace. 2020 will bring a whole new adoption trendline based on voice interaction capabilities.

Prioritizing Customer Service

Many of us have been there: We can’t find something or need help answering a question and see a popup in the corner of the webpage that offers real-time assistance. While humans are often behind that customer service interaction, chatbots are increasingly used as a means of answering a question or directing to the next interaction. The challenge today is that many of those chatbots are more based on simple automation, so help is limited, especially with more complex questions or requests. The next year will look to enhance that first-level chatbot experience from simple automation to more advanced comprehension and recommendation. AI will detect intent, establish emotional state, more appropriately answer questions, and on the back-end, provide the human side of customer service with the right information to ensure the customer is as satisfied as possible with the final actions.

⁴ *ibid.*

Riding the Millennial Wave

The next wave of workers will enter the workforce with a different (and better) level of data literacy. They'll be accustomed to leveraging advanced or next-generation technology in their everyday lives to solve problems or complete tasks and will look to do the same in their jobs. This will bring light to a new wave of influence within organizations to use AI to improve day-to-day tasks. While lines of business will likely continue to be the key driver in AI consumption, expect a bigger push from the workers themselves who look to benefit from advanced automation to improve operational efficiency and productivity.

The Good and Bad of AI-based Content

Throughout the year, numerous stories have highlighted some of the groundbreaking (and in some cases dangerous) angles of AI-based content writing to deliver ongoing financial news, highlight election/poll results, influence public opinion, change perception, and share "fake news." While many tools have remained private/proprietary, such as those used by national media outlets to write factual articles in a repeatable way, other technologies have become more newsworthy as of late. OpenAI can automatically generate intelligent text responses. Deepfake is the idea of utilizing specialized AI to layer in/out pieces of images, audio, and video. The former was previously kept private but was recently made available to the public. This is paving the way for more people, organizations, entities, etc., to leverage AI in legitimate or malicious ways. And of course, it must be mentioned that with a globally impactful presidential election on the horizon, it will be more important than ever to detect what is real and what is fake in publicly shared content. 2020 will pave the way to establish a global standard in AI-writer detection.

Focus on Mobility

When it comes to augmented analytics, the focus has been on incorporating AI and ML to democratize access to data and, more importantly, insights. The idea is to enable more personnel across an organization to utilize data. And over the next year, businesses will turn to BI tools that enable a new wave of end-users to access data, dashboards, and reports—and that means accessing all of that on their terms from their preferred device. ESG research shows that 57% of all workers expect to be able to perform the majority of their job functions from any device and nearly one-quarter (23%) of workers specifically use a mobile device for more than a third of their workday.⁵ Marrying data, analytics, BI, and insight with AI-based technology will be central to the democratization of analytics.

The Bigger Truth

AI is here to stay. Indeed, nearly one-third (30%) of senior IT decision makers expected it to be one of their organization's top five data analytics investments in 2019.⁶ And 2020 is expected to garner even more spend. Whether embedded AI in solutions/products, specialized infrastructure to support custom AI use cases, or turnkey solutions for specific repeatable processes, the first AI wave has hit the shores, and in 2020, the tidal wave of adoption is coming.

⁵ Source: ESG Master Survey Results, [2019 Digital Work Trends Survey](#), November 2019.

⁶ Source: ESG Master Survey Results, [2019 Technology Spending Intentions Survey](#), March 2019.

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