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## Building successful AI teams

It's no small feat in this market

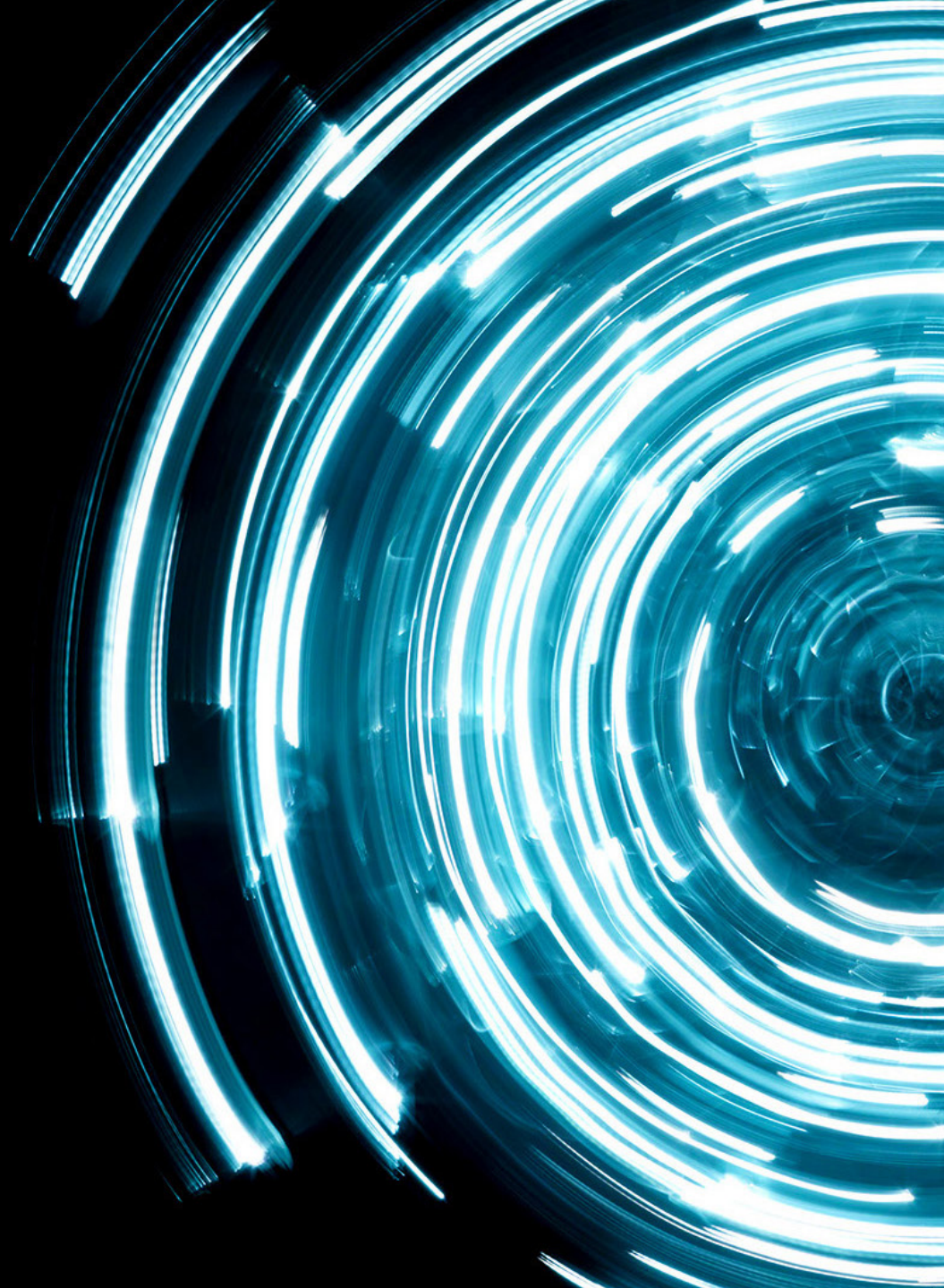
By Deloitte AI Institute

# About the Deloitte AI Institute

The Deloitte AI Institute helps organizations connect all the different dimensions of the robust, highly dynamic and rapidly evolving AI ecosystem. The AI Institute leads conversations on applied AI innovation across industries, with cutting-edge insights, to promote human-machine collaboration in the “Age of With”. Deloitte AI Institute aims to promote a dialogue and development of artificial intelligence, stimulate innovation, and examine challenges to AI implementation and ways to address them. The AI Institute collaborates with an ecosystem composed of academic research groups, start-ups, entrepreneurs, innovators, mature AI product leaders, and AI visionaries, to explore key areas of artificial intelligence including risks, policies, ethics, future of work and talent, and applied AI use cases. Combined with Deloitte’s deep knowledge and experience in artificial intelligence applications, the Institute helps make sense of this complex ecosystem, and as a result, deliver impactful perspectives to help organizations succeed by making informed AI decisions.

No matter what stage of the AI journey you’re in; whether you’re a board member or a C-Suite leader driving strategy for your organization, or a hands on data scientist, bringing an AI strategy to life, the Deloitte AI institute can help you learn more about how enterprises across the world are leveraging AI for a competitive advantage. Visit us at the Deloitte AI Institute for a full body of our work, subscribe to our podcasts and newsletter, and join us at our meet ups and live events. Let’s explore the future of AI together.

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A combination of culture change, job restructuring, hiring, re-skilling, and incorporating contract workers will deliver the team needed for a successful AI talent ecosystem.

The landscape of today's AI-driven organization is made up of humans and machines working side by side. Assembling teams that can succeed in that landscape requires companies to re-examine everything:

- 1) The teams themselves, including individual job descriptions, titles and career paths;
- 2) Team structures, including organizational design, internal alignment and the integration of skills and capabilities, particularly with the increasing reliance on outside talent; and
- 3) Team enablement, including culture, communications, collaboration, continuous learning, re-skilling, and up-skilling.

The intersectionality of these components is critical to team success. However, given the talent shortage – especially among data scientists and other STEM professionals – team building is a

complex undertaking. For four consecutive years, online employment resource Glassdoor has ranked data scientist the number one US job because it is so highly sought-after. What's more, the US Bureau of Labor Statistics reports that the demand for AI skills will drive a 27.9 percent rise in employment through 2026.<sup>1</sup> Relatively speaking AI is a new field. Even if skilled people were available, an army of AI talent may not be enough to keep up with global demands in this new data-driven world. What's needed is a thoughtful approach to building not only the best AI team to meet company needs, but also the structure they need to work under to be successful.



# Beyond the IT department: It's about building a culture for AI

Confining AI teams to one department fails to recognize the importance of AI to the entire enterprise; AI must be elevated and rooted in an organization's culture for them to succeed. And the process must begin with the executives at the top; they must commit to and propagate change companywide. The lack of an all-encompassing AI culture that truly values data and analytics capabilities and the superior decision making that flows from the technology is holding many global businesses back in their AI journey. AI and automation are a big transition for companies.

There are three types of change initiatives leaders can activate to move an organization in the right direction toward culture change: leading by example, promotions and rewards, and educational programs.<sup>ii</sup>

Leading by example requires showcasing leaders who visibly use and encourage the use of analytics and AI. Companies should devise internal marketing programs to spread valuable stories about how AI can augment human decision-making and automate tasks throughout an organization.

Promotions and rewards can also be a powerful tool in encouraging change across the organization. If individuals who make effective use of data and analytics get faster promotions and salary increases, others will notice.

Education should focus not only on attitudes and knowledge about data, analytics, and AI, but also on the business problems it can help solve at every level, in every department, including senior management. AI-fueled organizations are already finding themselves in leadership positions. How are they doing it?





### **Technology has become everyone's job**

Today every job requires an orientation toward technology. When asked about Amazon's \$700 million reskilling investment for employees, Senior Vice President of Worldwide HR, Beth Galetti acknowledged that the most consistent thing the company sees that's changing is the need for some level of technical skills in any job. With basic tech-savviness, employees have not only the fundamental skills they need in a quickly evolving and competitive environment, but also the mindset required to support a flourishing data and analytics culture.<sup>iii</sup>

In addition to being tech-savvy, AI teams must possess an understanding of the organization's business because they will be tightly integrated with the business units. The best data scientists aren't just technically minded, they understand the organization's business challenges and can assist in problem solving for optimal responses to the challenges. It's no longer enough to know Python and Cloud technologies; AI teams must also be business-savvy.

# Finding the right technology skills

A 2019 Deloitte survey of US executives found that most – 63 percent – do not believe their companies are analytics-driven and 67 percent say they are not comfortable accessing or using data from their tools and resources.<sup>iv</sup> Clearly these companies must embrace the value that AI delivers to augment human decision making and take steps to build skillful teams. But how?

These days, finding the right mix of technology skills for AI teams is challenging. Most companies are looking for individuals with a four-year degree in math, data science, statistics or computer science to qualify for an entry-level AI position. Masters and doctorate degrees in computer or cognitive science are becoming increasingly common for workers specializing in AI as well as desired by the companies who are hiring them.<sup>v</sup>

In addition to educational degrees, among the skills and knowledge those working with AI must have are:

- Programming
- Linear algebra, probability and statistics
- Big data technologies
- Algorithms and frameworks
- Communication and problem-solving<sup>vi</sup>

Acquiring such skills doesn't happen overnight. It takes years of training. In a rapidly evolving field, it's no wonder that the time needed to acquire such skills contributes to the talent shortage. It's very hard to go from zero to AI guru in a matter of months. Companies can't train their way out of the talent shortage alone.



## The high demand for talent means more hiring challenges

The growing digital economy, including organizations that are AI-enabled and data-driven, is bolstering demand for computer occupations.<sup>vii</sup> Computer occupations as a group are projected to grow 11.5 percent from now until 2029. That's about three times as fast as the average occupational growth. The mathematical science occupational sub-group is projected to grow the fastest among all STEM occupational groups. However, these occupations, which include data scientists, mathematicians, and statisticians, are relatively small, representing only 2 percent of all STEM jobs in 2019. The employment growth for this group, however, is estimated at 26.5 percent from 2019-2029.<sup>viii</sup> If this isn't telling enough...



When it comes to data scientists, there was a 250,000-person shortage in 2020, indicating high demand but low supply. And the average data scientist turnover is just a short two years with salaries on the rise.<sup>ix</sup>

AI teams must also become more diversified, as they don't currently reflect the diversity of the global population, causing companies to experience bias within their data. The best way to mitigate it is to build a team with diverse perspectives, including those of women and people with varied ethnicities and backgrounds. So far, few women and minorities have been part of AI and data teams. Hiring and mentoring them should be a top agenda item for companies.

### **Understand companies can't buy their way out the problem**

Because the talent shortage is so intense, data science teams are going to come from several sources. There just isn't enough top AI talent to hire. Advanced AI teams will need to be a mix of new hires, current employees, business and technical experts, contract workers, and those from diverse backgrounds. Companies will benefit if they can identify the right capabilities with which to build AI teams versus just the skills around certain technologies or degrees. For example, instead of specific Python experience, start identifying people with solid problem-solving skills, the ability to write code and learn new things quickly.

It's not only about who, but how AI teams work within an organization that will matter. Advanced AI teams are going to have to be thoughtfully structured, so the work is attractive and top performers have incentives to stay.





# Structuring an advanced AI team: Finding the best fit

Putting the best data scientists in the right jobs is critical and structuring the team is like putting together pieces of a puzzle. When it comes to AI, there is no one-size-fits-all because every company operates differently and has different use cases and demands. However, AI teams are generally organized according to one of the following structures:<sup>x xi</sup>

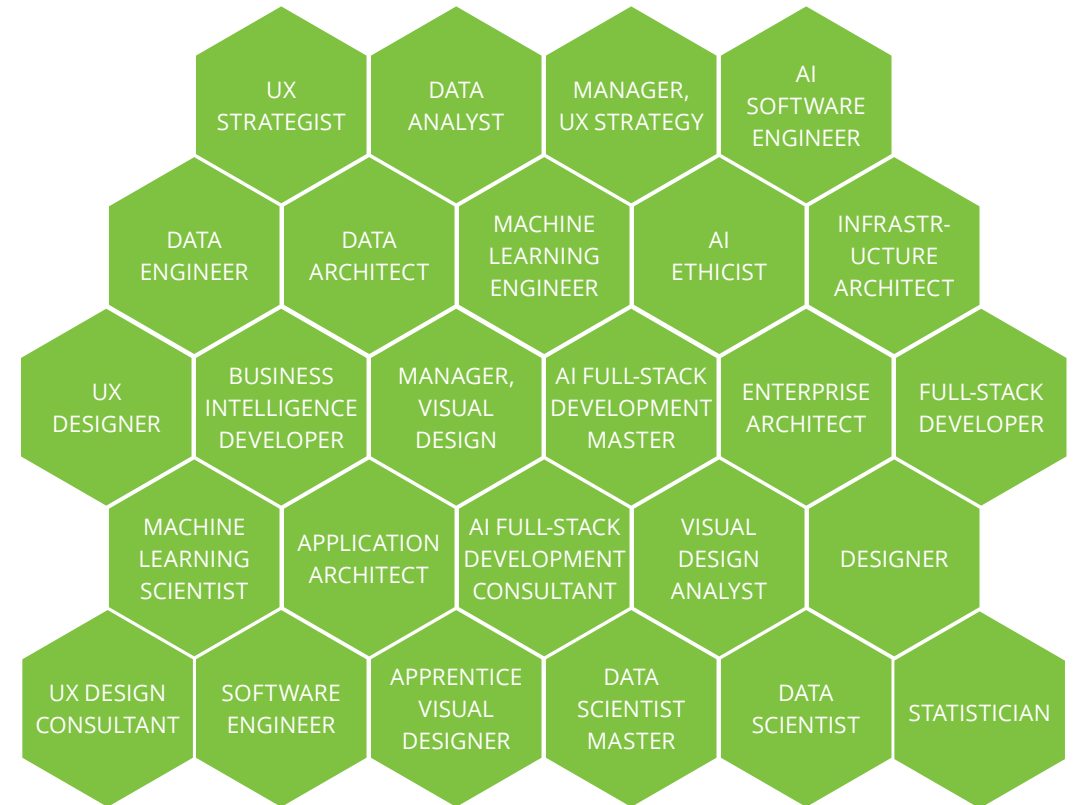
- Centralized in an established center of excellence (COE) that has management and governance oversight.
- Decentralized in teams organized around products, functions or business units that are matched with domain experts.
- Hybrid structure, which is a combination of the two.





Companies should examine what might work best for them. However regardless of the structure, data science teams should resemble a pod with a variety of skills and experience, such as technical product management, product management, and data-specific AI expertise with an in-depth knowledge of the industry and the business unit. Teams must also be evaluated regularly as roles are continually evolving.

**Potential roles within the team<sup>xii</sup>**



# A winning AI team combines existing and new skills

Hiring managers cannot expect to find an abundance of people with 20 years' experience in machine learning. The technologies are too new. A combination of new-hire STEM skills with experienced technology workers is needed.

## Hiring to train

For new hires, backgrounds in math, statistics and hard science are helpful, but so is experience in business. STEM applicants can take the business fundamentals they've learned and apply them to new technologies. Applicants with business backgrounds can be trained in the technology. Companies should look for candidates with AI, analytics and master's degrees in a related field and round out teams with individuals who have arts and creative skills, who may have better eyes on potential negative consequences in particular datasets that may otherwise go undetected. Team members can be taught the skills required and they will develop capabilities over time that will evolve into powerful AI careers. An environment of diversity and inclusion is crucial to attract and retain these new hires.

## Re-skilling and upskilling existing workers

There are many benefits to pulling from existing employees, the principal one being that they know the business and will know what the data means. They just need to be taken on the math journey and grounded in the technology. Essentially, this approach is building a bridge between

business and technology expertise. The first step is to identify workers who may want to take on a new challenge and focus on their capabilities instead of their existing skills. Training programs from internal and external sources can build on the skills they have. Organizations may want to encourage additional degrees and subsidize them. The training programs don't necessarily need to be built from within.



### **Retention: If projects aren't interesting, it could be a major obstacle**

Once a viable team is in place, retention becomes critical. If projects are not interesting, team members will quickly move on. Other, more lucrative opportunities will most certainly be calling. There are several options organizations can employ to incent team members to stay. These include:

- Mentoring and coaching opportunities.
- Offering a diversity of projects to encourage experimentation and the prospect of working with new technologies.
- Creating continuous learning activities through things like hackathons and collaborations with AI experts.
- Developing relevant job descriptions that can lead to flexible roles and careers within the organization.
- Ensuring job titles match the work team members are doing.
- Providing clear career destinations with clear upward mobility and compensation that's competitive.





# Successful AI team building strategies

When structuring AI teams, it's important to consider short-term and long-term options. Short-term solutions may include shared or managed services from an external partner that has AI teams already in place. Resources in this scenario could include designers, full-stack developers and data scientists. If you need specific experience or skills within AI, this may be the best option.

In addition, companies considering a merger or acquisition should keep in mind that AI talent can be absorbed in the process and companies should work toward onboarding them.

The bottom line: upskilling is not easy. It's important to have employees in place who are already experienced in designing programs to help team members achieve their goals in a timely manner. Advanced AI teams need strong leaders whether you source them internally or externally to run an AI effort.

For the longer term, organizations need to think about broader talent development for advanced AI teams. This initiative should include nurturing women trailblazers within the organization to serve as AI role models.

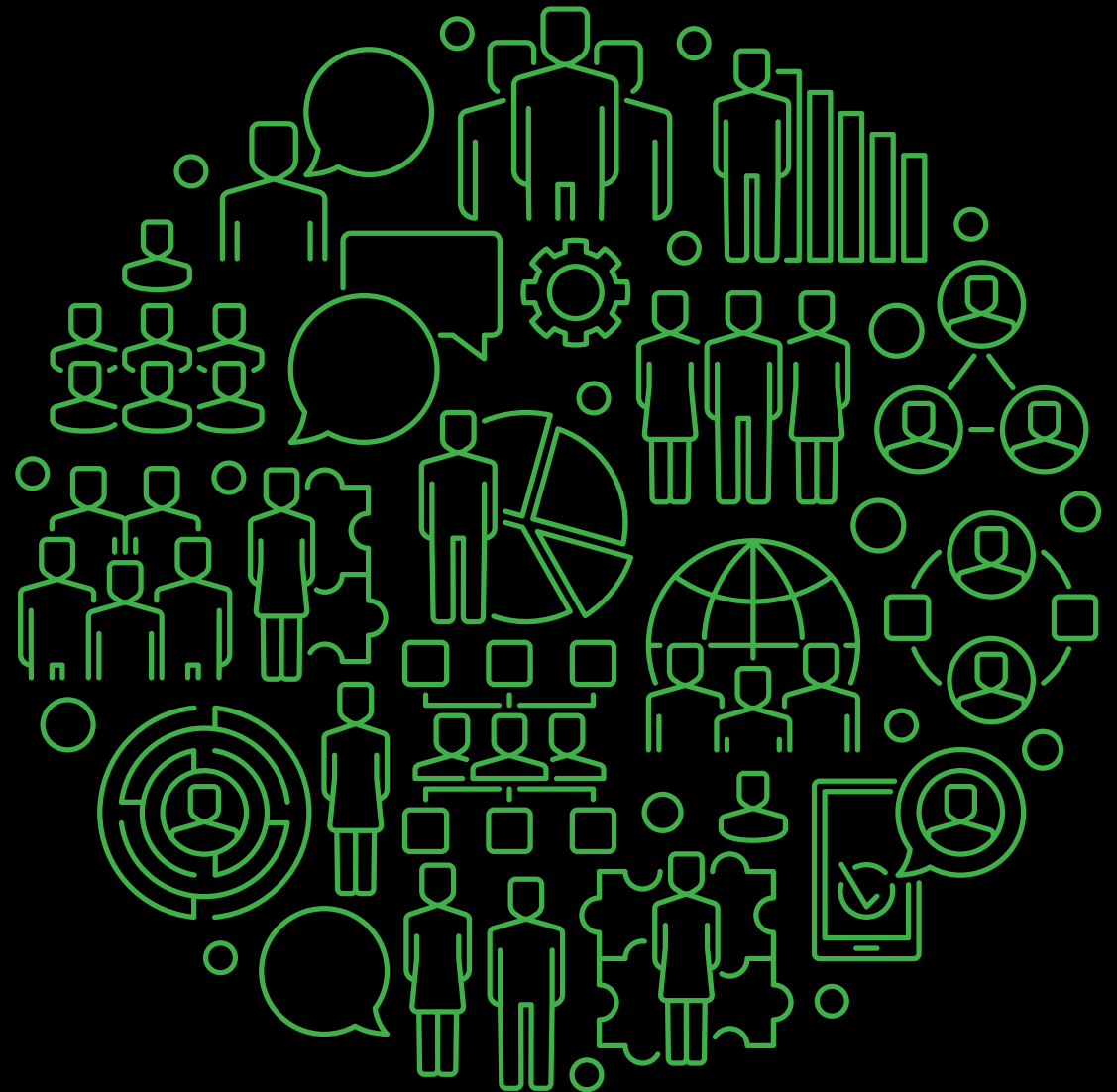
## Start early!

Partnering with K-12 schools to encourage interest in STEM careers is also important. In the past, students have not been as well prepared in math as they could have been, so organizations need to facilitate earlier interventions and encourage math refresher courses in order to have qualified candidates early in their careers.

Beyond K-12, establishing partnerships with top college programs and designing recruitment and internship opportunities will result in better qualified team members.

Finally, companies can create separate innovation business units that their top talent can run and experiment within that will result in both new ideas and engaged workers.

Despite the shortage of skilled AI talent, there are a number of ways to build, train, and retain effective teams that will do their best work with machines. These teams can be most powerful when they are allowed to bring human and technological capabilities together to re-architect work and deliver new value to all stakeholders. Given the right environment, skilled AI teams can unlock an organization's potential to achieve greater results than either humans or machines could achieve alone.





## End notes

- i. Kelsey Miller, [11 Data Science Careers Shaping Our Future](#), Northeastern University. June 4, 2020.
- ii. Thomas Davenport and Nitin Mittal, [How CEOs Can Lead a Data-Driven Culture](#) Harvard Business Review. March 23, 2020.
- iii. Ibid.
- iv. Ibid.
- v. Michael Dusunmu, [How to Become an Artificial Intelligence Specialist](#), Degrees and Careers. April 30, 2020.
- vi. Ibid.
- vii. Alan Zilberman and Lindsey Ice, [Why Computer Occupations are Behind Strong STEM Employment Growth in the 2019-29 Decade](#), Beyond the Numbers. January 2021.
- viii. Ibid.
- ix. Jen Dubois, [The Data Scientist Shortage in 2020](#), QuantHub. April 7, 2020.
- x. Justin Charness, [How to Organize Data Science Teams](#), Oracle. December 21, 2018.
- xi. Maryna Demchenko, [Three Ways to Structure a Data Science Team](#), Ncube. August 4, 2020.
- xii. Miller.

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