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Women in AI

Deloitte AI Institute

Foreword

Increasing the representation of women in critical technical AI roles takes more than just recruiting efforts—it starts with fostering an inclusive culture and improving access and opportunity for growth and advancement.

The world's most customer-focused companies understand that diversity, equity, and inclusion (DEI) are business imperatives for success.

Companies understand that they are better served by building and maintaining diverse teams that reflect the broad diversity of their customers and our communities. Our diverse perspectives help us to think bigger, and differently, about the products and services we offer and the day-to-day nature of our workplace.

Now more than ever, companies are evaluating and implementing new DEI strategies. They realize that to grow and succeed as organizations and leaders, they need to be bolder, challenge orthodoxies and inspire change. And it has to deliberate in order for companies to see sustained progress.

This report illuminates ways to do that and it goes far beyond traditional recruiting. It starts with cultivating dreams. Early STEM education shows young women and girls how AI roles can impact their life trajectory. It takes real, active mentorship that's organic and promotes curiosity. And it's crucial that women help trailblaze the pathways for girls, build relationships with them early, and help them become AI leaders that organizations can then champion, retain, and promote.

While organizations are making headway in their DEI efforts, it's also clear we need to do more. We all do. And we hope this report inspires new routes to get there.

Kavitha Prabhakar
Chief Diversity, Equity, and Inclusion Officer
Deloitte

LaDavia Drane
Head of Global Inclusion, Diversity & Equity
AWS

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 the 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.

www.deloitte.com/us/AIInstitute

What's inside

Setting the scene:

The state of women in AI today

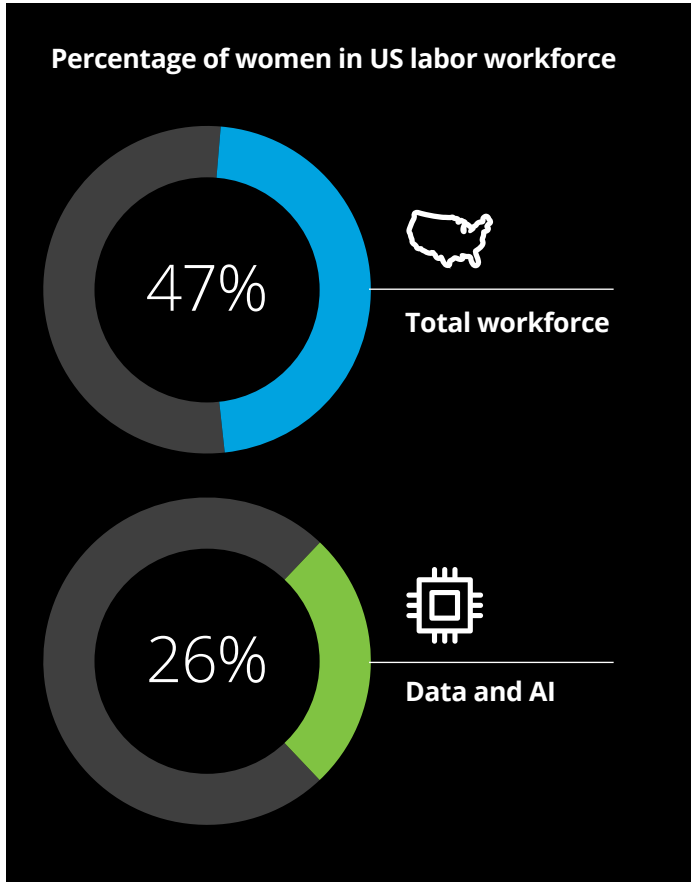
Enterprises across industries today face a common barrier to achieve their AI goals—talent.[1] Lacking the necessary AI skills, many organizations are ramping up their AI hiring while looking to diversify their talent sources.[2] Demand for AI only looks to continue to grow—a 2020 LinkedIn report found that Artificial Intelligence Specialist is the top emerging job in the United States, with hiring growth for the role increasing 74 percent annually over the past four years.[3]

Despite the surging demand for AI, at least one talent pool that could help businesses achieve their AI ambitions has remained largely untapped—women. In 2020, women represented roughly 47 percent of the US labor force.[4] Furthermore, in 2019 women received the majority of graduate certificates, master's degrees, and doctoral degrees from US institutions.[5] A 2020 World Economic Forum report, however, found that women make up only 26 percent of data and AI positions in the workforce,[6] while the Stanford Institute for Human-Centered AI's *2021 AI Index Repor*t found that women make up just 16 percent of tenure-track faculty focused on AI globally.[7]

There has been persistent and unmoving gender diversity in AI for a while. In 2019, women accounted for 22 percent of all AI and computer science PhD programs in North America, just 4 percent higher than the same statistical category from 2010.[8]

So what is driving this sustained gender gap in AI, and how can we address it?

This *Women in AI* whitepaper, in which Deloitte interviewed women[9] who have risen to AI leadership positions within their organizations in addition to surveying individuals[10] working in AI, unpacks the roots of the gender gap in AI, provides a potential path for organizations to fix it, and shows how businesses that do not could be handicapping themselves.



“To be truly diverse you need to bring people into AI that think differently”

Kay Firth-Butterfield
Head of AI & Machine Learning and
Member of the Executive Committee
World Economic Forum

Women's value in AI:

Why gender diversity matters

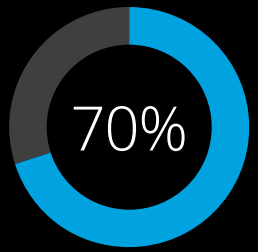
Today, evidence is reinforcing that gender diversity, particularly among leadership positions, drives increased productivity, profitability, and market value for organizations across industries:

- Goldman Sachs research found that companies with "diverse" boards (Goldman did not define "diverse," but said the emphasis was on women) performed stronger in public markets. Organizations with at least one diverse board member increased their average share price by 44 percent in their first year after going public, a significantly higher figure than companies with no diverse members (13 percent).[11]
- Research from the MSCI Women's Leadership Index shows that, since 2016, publicly traded large-, mid-, and small-cap companies in the United States,[12] Canada,[13] and Europe[14] that prioritize gender diversity among their executive leadership and board of directors have yielded higher net returns in their respective equity markets than companies not committing to gender diversity.
- An *HBR* study analyzing the connection between productivity and gender diversity found that, among Western European companies, a 10 percent increase in the ratio of women to men in the workforce correlated with a 7 percent increase in market value.[15]

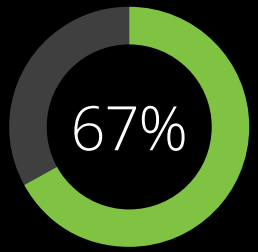
The business case

Deloitte's survey with women and men working in AI and machine learning further demonstrated that having more women within an organization can only benefit a business.

Respondents strongly agreed:



Companies that promote and elevate diverse groups within their organization will benefit as a result.



Having more women in managerial, leadership, and role model positions directly benefits an organization's employees.

Data shows that companies with diverse and inclusive cultures are betting on fueling productivity and innovation within their workforces, translating into better products, a competitive edge over peers, and improved sales and profit.[16] Within AI, the importance of diversity has been well documented as well: In order to build an effective AI system—including defining a problem for AI to solve, designing a solution, selecting and preparing the data inputs, and constructing and training the algorithms—an AI team should be as diverse as the populations that its AI will impact.[17]

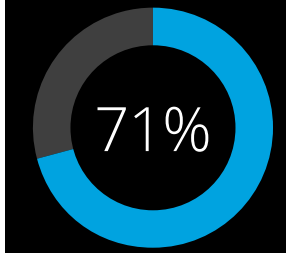
Levers for diversity include gender, race, socioeconomic background, work experience, age, ability, privilege, and experience with discrimination, among others. Having diversity across a number of criteria helps ensure a wide range of perspectives and lived experiences are incorporated into the design and implementation of an AI system. Because of the need for AI teams to reflect the populations they intend to address, and given that half of the world's population is female,[18] as AWS' Allie K. Miller (Global Head of Machine Learning Business Development, Startups and Venture Capital) put it, having more gender diversity within AI is a matter of "common sense."

Having diversity across a number of criteria helps ensure a wide range of perspectives and lived experiences are incorporated into the design and implementation of an AI system.

The AI case

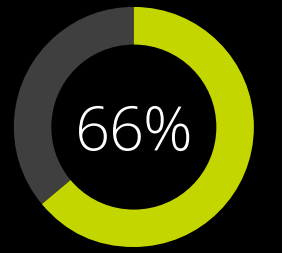
Deloitte's survey with women and men working in AI and machine learning reinforced that having more women in the space improves the design and functionality of AI systems.

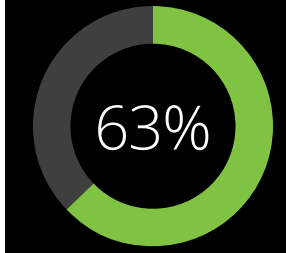
Respondents strongly agreed:



Adding women to AI and machine learning will bring unique perspectives to high tech that are needed in the industry.

AI and machine learning solutions would benefit from having more diverse employees in designer and developer positions.





AI and machine learning models would always produce biased results as long as AI continues to be a male-dominated field.

The importance of diversity within AI teams is connected to one of the biggest challenges facing AI today: biases within AI systems.[19] While most AI bias is unintentional and goes unnoticed, if AI systems perpetuate existing forms of gender bias, they will fail to reach their fullest capacity and could ultimately hinder organizations' progress in implementing AI effectively. At best, the algorithms should be retooled after being evaluated. At worst, organizations could face regulatory or reputational risks.

A more diverse workforce is better equipped to identify and remove AI biases as they interpret data, test solutions, and make decisions. Specific to gender, women are likely to catch things men might miss (and vice versa). In this regard, gender diversity can benefit AI development.

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Leadership perspectives:

What the top women in AI have to say

We interviewed women holding leading AI-related leadership positions, including chief scientists, heads of AI-related business development and product integration, and CEO's and Founders at AI firms. In our discussions, several common themes emerged regarding what is driving the gender gap in AI and what can be done to resolve it.

Diversity of perspective is critical for effective AI

A central theme promoted by our interviewees was that diversity of perspectives and lived experiences (informed by criteria such as differences in gender, race, socioeconomic background, work experience, age, ability, privilege, and experience with discrimination) is critical to developing strong AI. A team with diverse perspectives is better at challenging assumptions and identifying problems to solve with AI as well as challenge assumptions, weed out unconscious biases, and identify blind spots within an AI system to help ensure it has a positive impact on as many populations as possible.

In that vein, our interviewees cited the "demonstrably different" lived experiences of women as a pivotal reason for women's inclusion in the AI space. While individual women's lives are inherently unique, shared experiences across our interviewees included being discriminated against due to gender, making the majority of household-related decisions, living in a world in which products in the market—including headphones,[20] smartphones,[21] voice-command systems,[22] fitness monitors,[23] even air-bags in cars[24]—have been designed for men, and balancing their workloads with their roles as mothers. These different lived experiences and interactions inform perspectives that are highly diverse from those of men—in being diverse, women's perspectives can bring insights and value that were previously missing. When accounted for, women's perspectives can enable AI teams to develop more holistically valuable products that can bring a positive impact to a wider audience of users.

Women can also bring a different mental toolkit towards artificial intelligence development.

A team with diverse perspectives is better at challenging assumptions and identifying problems to solve with AI.

"Women should not need permission to perform their work in AI."

Dr. Poppy Crum
Chief Scientist
Dolby Laboratories

Women often face a continuous battle for credibility

A shared experience among many interviewees was that women in AI, regardless of position or seniority, are often constantly faced with resistance, questioning, and judgement. Women interviewed noted having to constantly prove themselves credible and experienced when interacting with their male colleagues—examples cited by our interviewees included pitching a business idea, making an AI design suggestion, or making a case for a promotion. Our interviewees' struggles for credibility often stemmed from underrepresentation—they discussed often being the only woman on an AI team or in the board room.

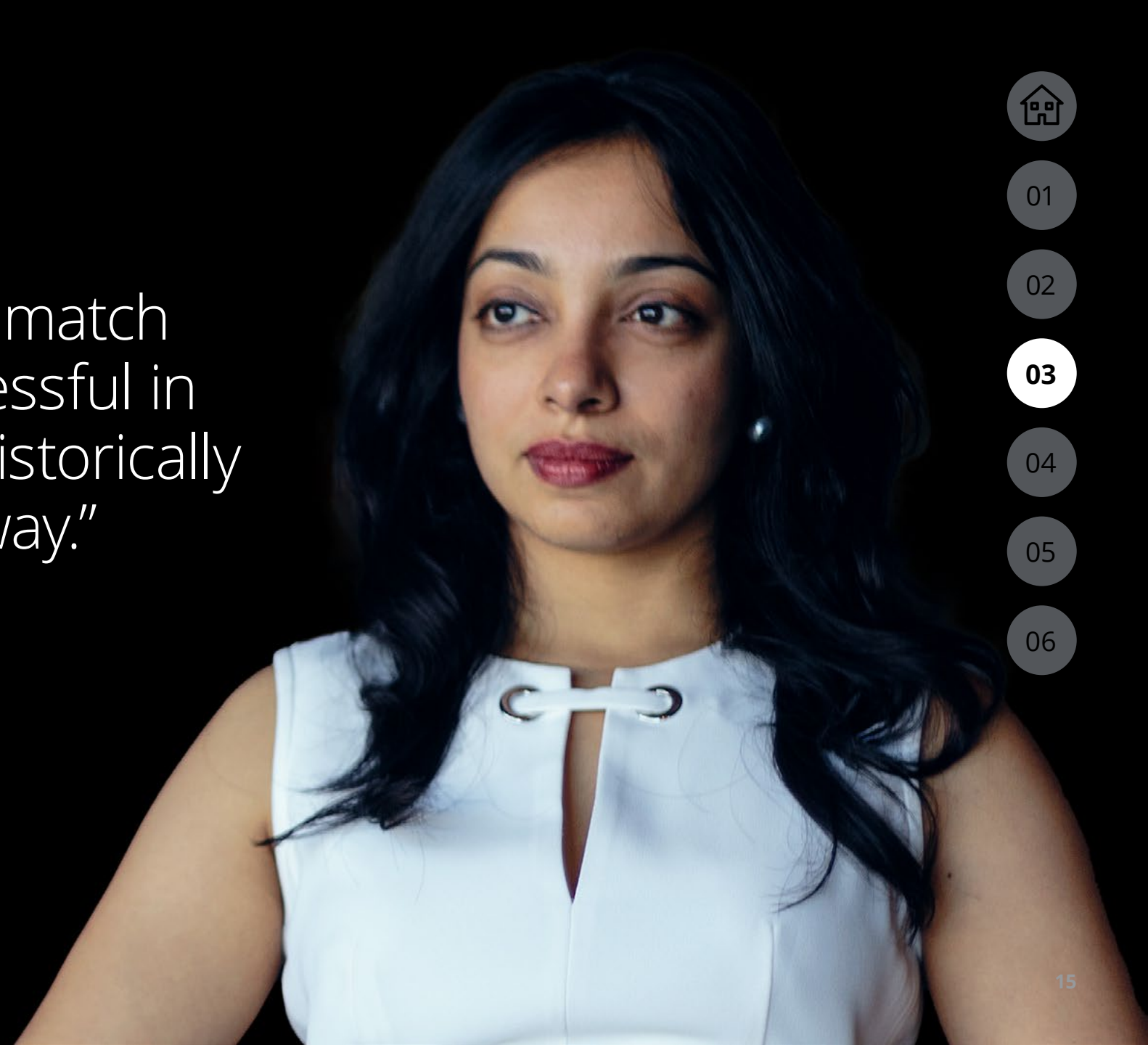
Our interviewees noted that their male colleagues' experience and expertise is often generally assumed. One interviewee commented that "within AI men are expected to develop into a role, while women are expected to show they are experienced enough before they are eligible for the role." Another interviewee said she used to tell a more junior male colleague whom she managed to bring up her business ideas while in meetings with other men, as she knew from experience that if she had brought up the same ideas they would be ignored.

The continuous cycle of what one interviewee referred to as the "Girl Scout badges phenomenon"—women needing to constantly overcome being doubted, discounted, or even ignored altogether and "get a badge" to move forward in their work—can put women in an uncomfortable and tiring position, which likely contributes to attrition and pay inequality among women in AI. As one interviewee put it, "women should not need permission" to perform their work in AI.

Women interviewed noted having to constantly prove themselves credible and experienced when interacting with their male colleagues.

"People tend to pattern match to what has been successful in the past, and leaders historically have looked a certain way."

Dr. Radhika Dirks
CEO & Co-founder
Ribo AI



The lack of a woman archetype in AI can be damaging

Many of our executive interviewees noted that throughout their careers there was a scarcity of examples of female leadership in artificial intelligence. The lack of a woman scientist archetype limited our interviewees' impact with their work at times. "I did some amazing work that I did not know could be taken to the next level," one interviewee said, "because I did not have a framework for what a next level was." As another interviewee put it, "the lack of seeing people who look like you in leadership roles" is damaging.

Women leaders can also face discrimination as a result of not fitting the established male-dominated mold in AI. One interviewee said that "people tend to look at what has been successful in the past, and leaders historically have looked a certain way"—meaning male. "When you do not look that certain way, that works against you."

This is not to say that female leaders have not existed in STEM or that women historically have not made seminal contributions to the AI space—it is just that society has typically not placed emphasis on them. This, according to our interviewees, needs to change. One example brought up by an interviewee is Ada Lovelace, the nineteenth century mathematician whose work inspired Alan Turing in his foundational contributions to AI.[25] Historical examples such as Ada Lovelace, as well as current women leaders in science, need to be promoted more to show today's and tomorrow's women what is possible in AI.

Women leaders can also face discrimination as a result of not fitting the established male-dominated mold in AI.

"When looking at my career, most of my successes could be traced back to a mentor. The benefits of mentor-mentee relationships cannot be over-indexed."

Allie K. Miller
Global Head of Machine Learning Business Development, Startups and Venture Capital
AWS

Mentorship is key

Mentorship proved to be critical for several interviewees in overcoming the challenges facing them as women in AI and rising to leading AI roles within their organizations—one woman called it "the most defining thing in allowing me to find my career."

One distinction made by interviewees was that this mentorship did not come in the form of a formal or organization-led program, but rather from women—and men—who shared similar interests and helped the interviewees identify opportunities, set expectations, and overcome barriers in their careers.

Finding a mentor is not a passive activity and required our interviewees to search for and reach out to individuals with whom they could relate. The rewards for their efforts, however, were significant. As one interviewee put it: "When looking at my career, most of my successes could be traced back to a mentor. The benefits of mentor-mentee relationships cannot be over-indexed."

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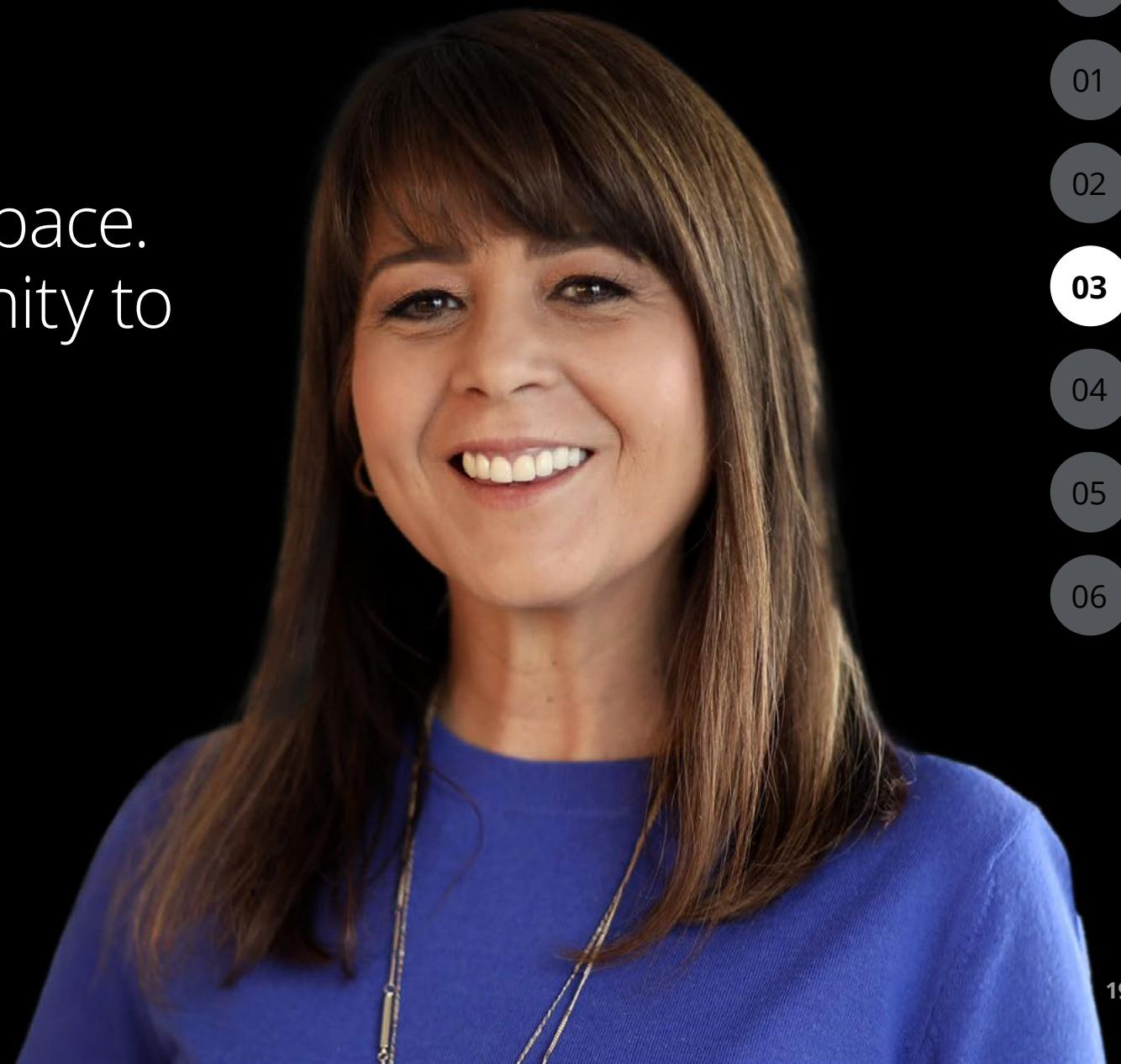
"We are all learning in this space. Everyone has the opportunity to grow with AI."

Tami Frankenfield
Managing Director – Data, Analytics & Cognitive
Deloitte Consulting LLP



Working in AI means many different things

Our interviewees pointed out that there are many pathways towards working in artificial intelligence, and being an engineer or having a degree in data science is not a prerequisite. As one interviewee put it, "There are infinite paths to get into AI and machine learning, majoring in computer science being one of them, however some of the strongest women I know in AI were English majors or Art History majors."

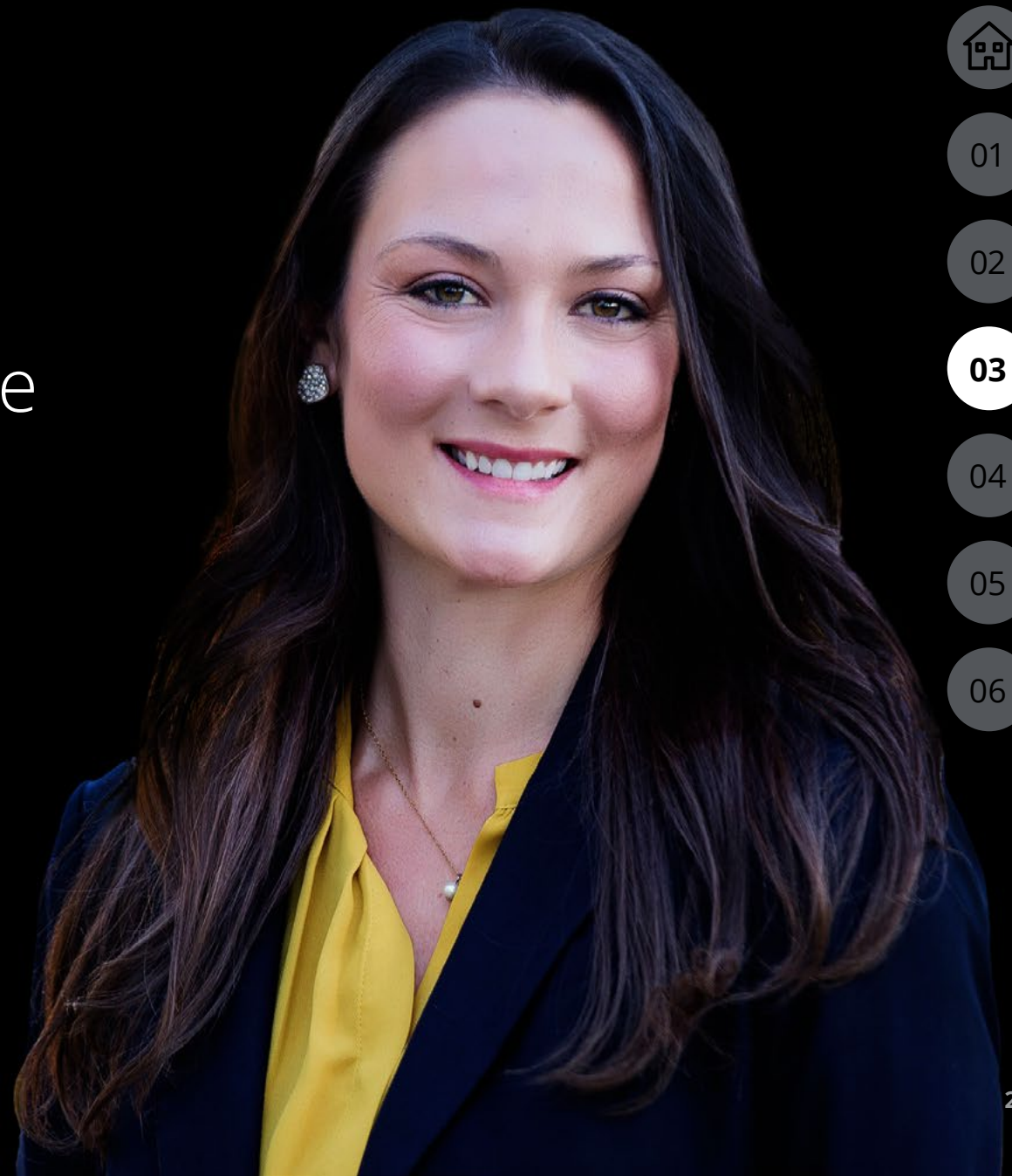
Developing effective artificial intelligence requires an in-depth understanding of the problem that is being solved for. Because of this, individuals who do not have a programming or computer science background, but do have expertise in a given domain (be it within an industry or business area) can, and should play a fundamental role in strategizing and implementing AI systems. Separately, women with a strong mathematical and statistical background also have a role to play in constructing AI.

Diversity of work experience is central to an effective AI team, and some interviewees' organizations, when recruiting for AI positions, prioritize characteristics and aptitudes over specific skill sets. This can open the door for women from a wide range of professional backgrounds to enter AI.

Developing effective artificial intelligence requires an in-depth understanding of the problem that is being solved for.

"It's all a journey, so focus less on the destination and be aware that traveling a non-linear and non-traditional path is okay—or even better than okay."

Dr. Ashley Van Zeeland
VP Development,
Product Integration and Customer Collaboration
Illumina



Despite its challenges, being a woman in AI also has advantages—and the future is bright

Women may face more challenges in AI than men. That said, there was a strong sense of resourcefulness and optimism among our women interviewees when discussing the future for women in the space.

Interestingly, several interviewees said that being a woman in male-dominant AI in many ways has been an advantage. Women noted that while being the only woman in the room has been a challenge, it has also helped them stand out, differentiate themselves, and have a lasting impact on their organizations. "When you look different, you have to think differently and approach problems differently, which makes your perspective different," said one interviewee. "That makes you memorable. People work very hard to be memorable."

Despite the reported dearth of data and AI positions held by women, another surprising and positive theme that surfaced across interviews with our female executives was that men are not "ahead" of women in AI. AI is still a nascent field in which relatively few people have leading expertise, and as such many organizations and their workforces are just beginning their AI journeys. "We are all learning in this space," said one interviewee. "Everyone is at ground zero with AI."

AI is still a nascent field in which relatively few people have leading expertise.

"Don't be afraid to ask for help. You're not any lesser if you need help. Don't struggle in silence."

Dr. Nashlie Sephus
Applied Science Manager
AWS

Advice from women leaders in AI, to their younger selves

On career paths

"It's all a journey, so focus less on the destination and be aware that traveling a non-linear and non-traditional path is okay—or even better than okay. I could never have predicted the opportunities I would have, or the technologies that would emerge and spark my interest, and so being open to taking those forks in the road as they come up has really shaped my career."

Dr. Ashley Van Zeeland
VP Development,
Product Integration and Customer Collaboration
Illumina

"Embrace the randomness. I've stopped making 10-year plans. My job did not exist 3 years ago—it was nowhere in the world. There are infinite paths to get into AI and machine learning. You don't have to follow a certain perfect path—it's not this narrow little sidewalk you have to tiptoe, it's a 14-lane highway and there are many ways to become a woman in AI."

Allie K. Miller
Global Head of Machine Learning Business Development, Startups and Venture Capital
AWS

"Don't be afraid to venture into an unfamiliar discipline to maximize your opportunity for impact. However, doing so effectively requires engaging with collaborators from other disciplines openly, constructively, and with respect: One needs to be willing to ask naive questions in order to learn."

Daphne Koller
CEO & Founder
insitro

On professional development

"Biggest piece of advice I give is to build a personal board of directors."

Allie K. Miller
Global Head of Machine Learning Business Development, Startups and Venture Capital
AWS

"Don't be afraid to ask for help. You're not any lesser if you need help. Don't struggle in silence."

Dr. Nashlie Sephus
Applied Science Manager
AWS

"Question your perspective and how it might be limiting you."

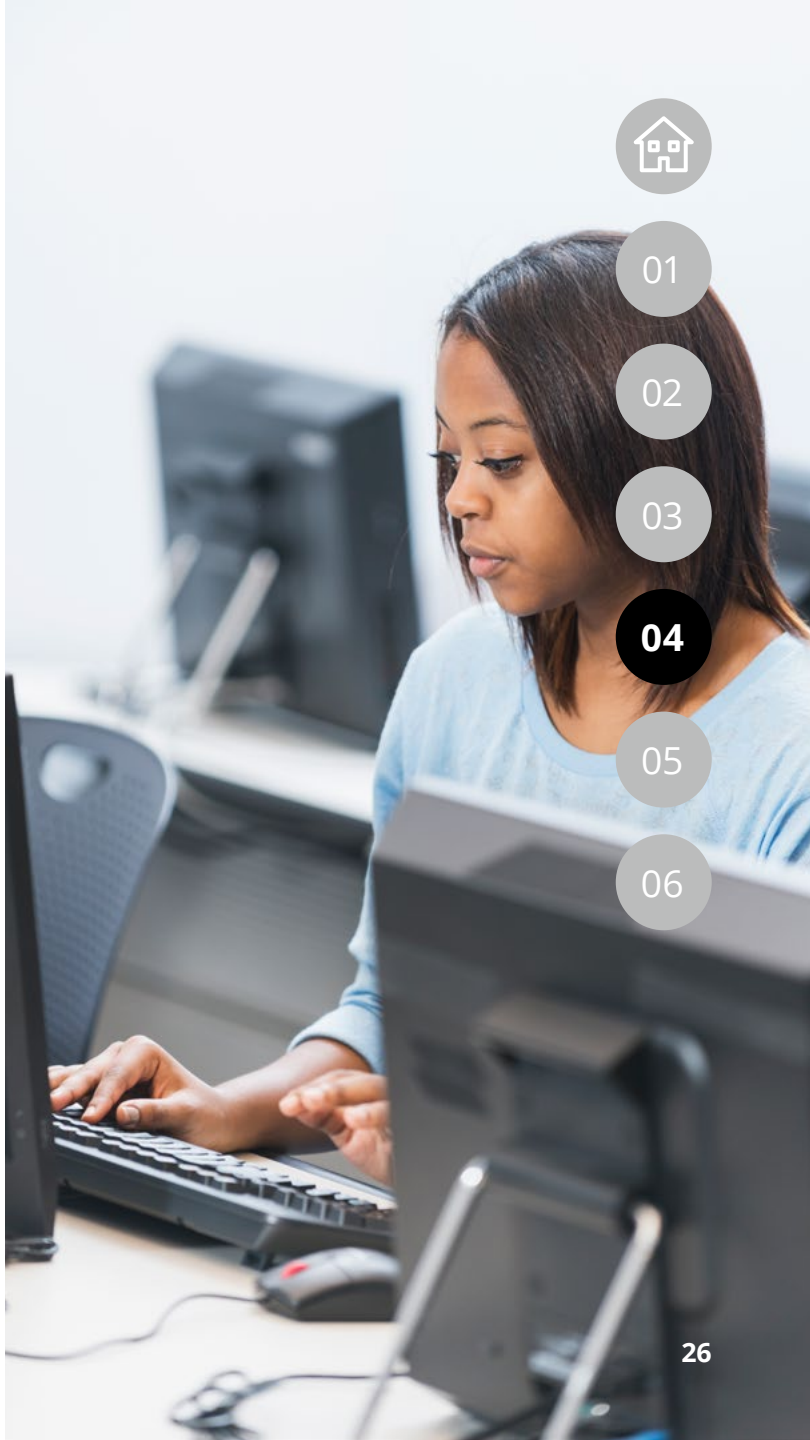
Jana Eggers
CEO
Nara Logics

Why more talented women do not enter AI

External research and conversation with female executives clearly establish that the reason there are not more women in AI typically starts long before a young women or girl enters the working world. Social and cultural influences, notably the false stereotype that girls are not as capable as boys in math and science, often dissuade girls from pursuing STEM-related paths.[26] Several of our interviewees noted that if they had not had a direct influence to get into STEM (for example, having a mother that worked in science or being sent to an engineering camp in middle school), they likely would not have pursued a path towards AI.

The difficult path towards AI continues for women in the educational system. In addition to dealing with being one of the few women in a given STEM class in college and graduate school, many women receive few resources that educate them on the different potential paths toward working in AI, making AI an ambiguous and somewhat intimidating space for women to enter.

Social and cultural influences, notably the false stereotype that girls are not as capable as boys in math and science, often dissuade girls from pursuing STEM-related paths.



Our survey revealed that on college campuses, there is a lack of attention being placed on opportunities for women in AI. 84 percent of women respondents were never recruited for AI and machine learning positions through their campus career center, and 82 percent of women respondents were never recruited through campus career fairs. Additionally, 78 percent of women respondents did not have a chance to intern in AI or machine learning while they were students.

Beyond college campuses and in the working world, implicit biases in the recruiting process serve as another barrier preventing women from entering AI. Common barriers noted by our interviewees include gendered language in job titles and descriptions, as well as a lack of diversity in the hiring process (for example, interviewing with an all-male panel). Furthermore, our interviewees discussed how there is too much emphasis within AI placed on engineering—a male-dominant role—and less focus on other AI roles such as product management, user experience, data science, and AI ethics. A lack of education and clarity on the range of roles and industries in which one can work with AI has contributed to keeping more women out of the field.

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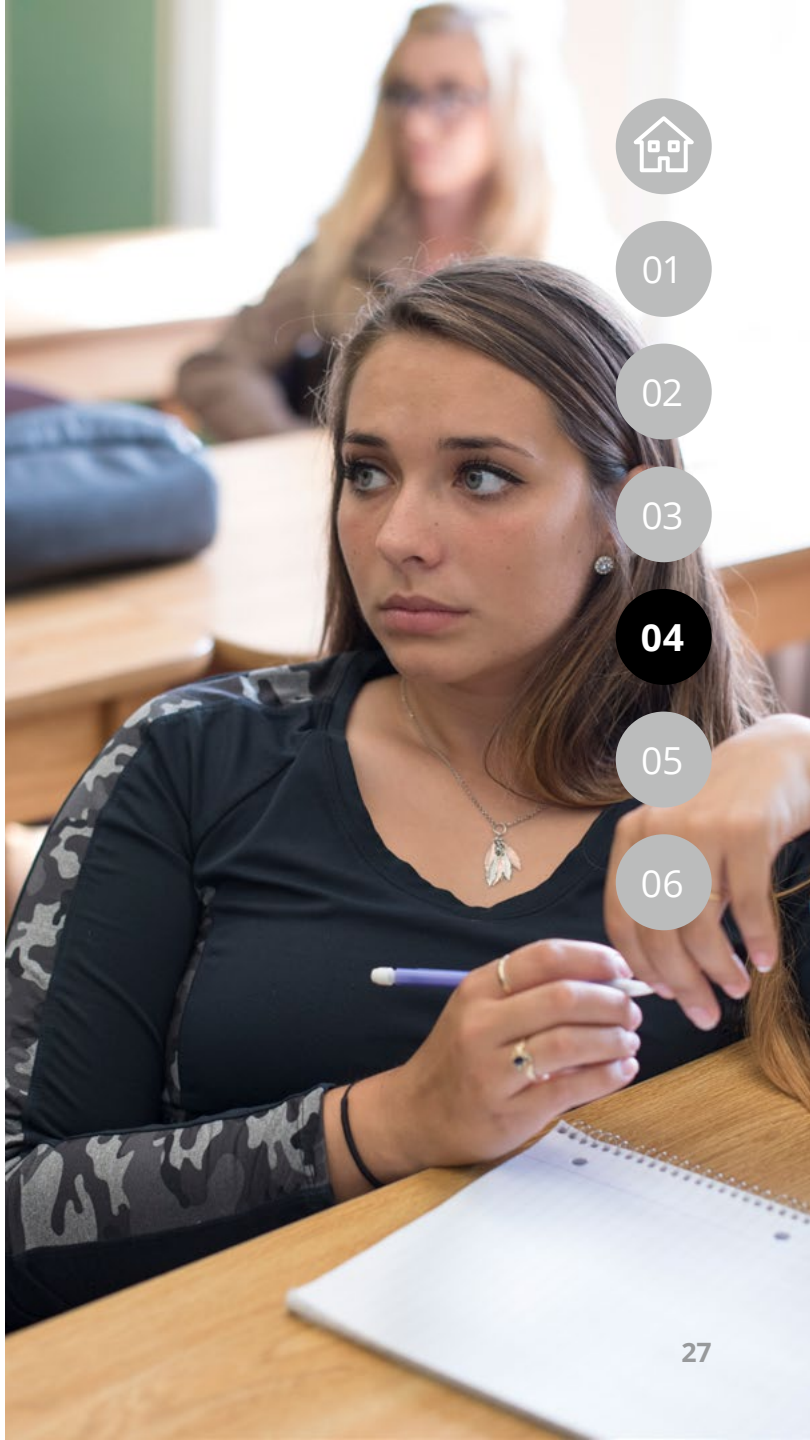

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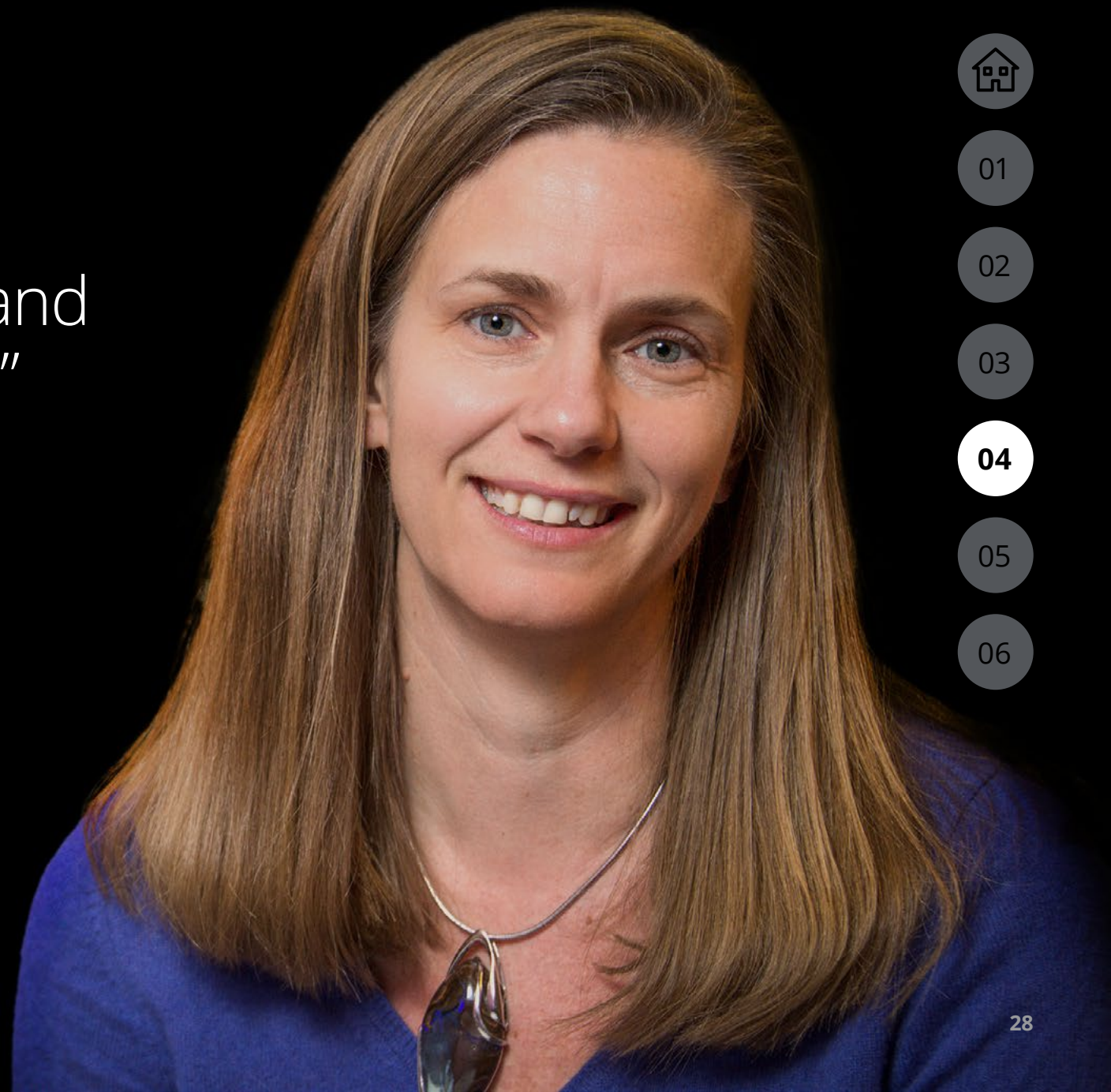

Retaining women in AI:

What makes them stay (and go)

Once women overcome the first hurdle of getting into AI, they often face another challenge: staying. Half of women who work in STEM fields leave the industry by the 10-year point in their careers,[27] a disproportionately higher figure than that of men.[28]

Deloitte's survey of women in AI surfaced themes as to what is pushing women out of AI, and what could keep them in the space. Simply put, many women feel they are not treated the same as men in AI, and it is driving many of them out. Over half (58 percent) of all our women respondents said they left an employer due to different treatment of men and women.

Our survey reinforced the unfortunate reality that gender discrimination is still a very real problem in the workforce within many STEM fields. 68 percent of our women respondents said sexual or gender-based stereotypes served as an obstacle in their professional career, and 57 percent of women respondents said they left their employer due to discrimination. Our survey is consistent with larger industry trends—women within STEM face a significantly higher percentage of gender discrimination than men, and more than women working in non-STEM fields.[29]
In addition to dealing with gender discrimination, women typically face more challenges with receiving recognition than men. 84 percent of women respondents said they had left an employer due to feeling underappreciated, unwelcome, ignored, or taken for granted, a significantly higher figure than that of men respondents (49 percent). Difficult management appears to be a bigger issue for women than men as well—69 percent of women respondents said they had had a conflict with their manager which contributed to them leaving a company, compared with 55 percent for men.

Equitable treatment can keep women in AI

When looking at what women want in order to stay working in AI, the answer is: to be treated the same as men in the space.

This comes in several forms, but two of the more major issues involve pay and career path. 66 percent of women respondents in our survey said eliminating pay gaps in AI and machine learning roles is a primary solution in making the field more viable for keeping women. Additionally, 60 percent of women respondents said increased visibility within an organization is an influencing factor when taking a job with an employer.

Unfortunately, this is often not being addressed, leaving many women on the fence about staying in tech roles—73 percent of women who have been in tech for over 8 years had considered leaving due to an inability to advance professionally as well as inequitable compensation.[30] Retaining the essential talent and perspective of skilled professional women in AI is not possible without equal pay and treatment between men and women. If female professionals do not find equal opportunity or compensation in one field, they will likely turn to other organizations, industries, or fields that put an emphasis on equity.

Organizations are waking to the necessity to retain women in AI, and many of them are creating formal initiatives (women-only training, mentorship programs, flexible work plans as several examples) in an attempt to appear more attractive to women. Interestingly, however, women in Deloitte's survey did not think organizational initiatives on their own will make the AI space more equitable, or viable, for women. Less than half of women respondents (46 percent) believed that the creation of groups and networks for women will create equity in AI and make the field more viable for women. Additionally, less than half of women respondents (44 percent) think more generous family-oriented benefits will make AI more viable for women. From speaking with our executive women interviewees, it was made clear that a gender inclusive culture within an organization is first and most important in making AI more viable for women—that is the foundation upon which all other tools for equality should be built.

“Don’t be afraid to venture into an unfamiliar discipline to maximize your opportunity for impact.”

Daphne Koller
CEO & Founder
insitro

The path forward:

How to create a better future for women in AI

In evaluating the current state of women working in artificial intelligence, there are several clear yet conflicting realities.

Statistics show that women are disproportionately underrepresented in AI and machine learning roles. This is the case even though increased gender diversity within an organization, particularly at the leadership level, has been directly linked through multiple studies to increased productivity, innovation, profitability, and market value for an organization. Deloitte's survey with men and women working in AI and interviews with executives further support the importance of women working in AI: women offer different perspectives and lived experiences than men, and as a result have an ability to identify and root out built in biases in AI systems that their male colleagues might miss. An AI team should be as diverse as the populations that its AI will impact, and in a world in which half the population is female, equitable gender representation is a must.

Yet despite the facts that 1) there are fewer women in AI and 2) more women in AI can create better outcomes for both the organizations they work in and the populations that their AI system impacts, many businesses not only fail to attract women into AI, but also drive women currently in the space out through unequal treatment and compensation. Many women are faced with constant resistance, questioning, and judgement that their male colleagues often do not experience, which, combined with lower compensation, ultimately contributes the higher rates of attrition among women in AI.

The challenges facing women in AI are significant, but input from leaders and workers in the space, both male and female, unearthed several actions businesses can take to address the gender gap in AI and start making the artificial space more equitable for women.

Build and showcase archetypes of women in AI

It is critical to have visible female scientists or AI leaders within businesses and society. Doing so not only provides women working in artificial intelligence clear examples of how to rise professionally, but also helps deconstruct negative cultural stereotypes about women and girls not belonging in STEM. Without an archetype to point to that shows that women working in STEM is not only possible but also cool, we could risk countless young women and girls not even approaching the field due to cultural pressures, which may only reinforce the gender gap.

There should be a continued emphasis on showcasing female AI trailblazers (for example, in panels or webinars) to highlight the opportunities that await women in STEM. Furthermore, organizations that can market AI to young women girls across mediums such as social media not only have the potential to inspire a new generation of female scientists, but also build a brand of gender inclusivity to attract talented women to their workforce.

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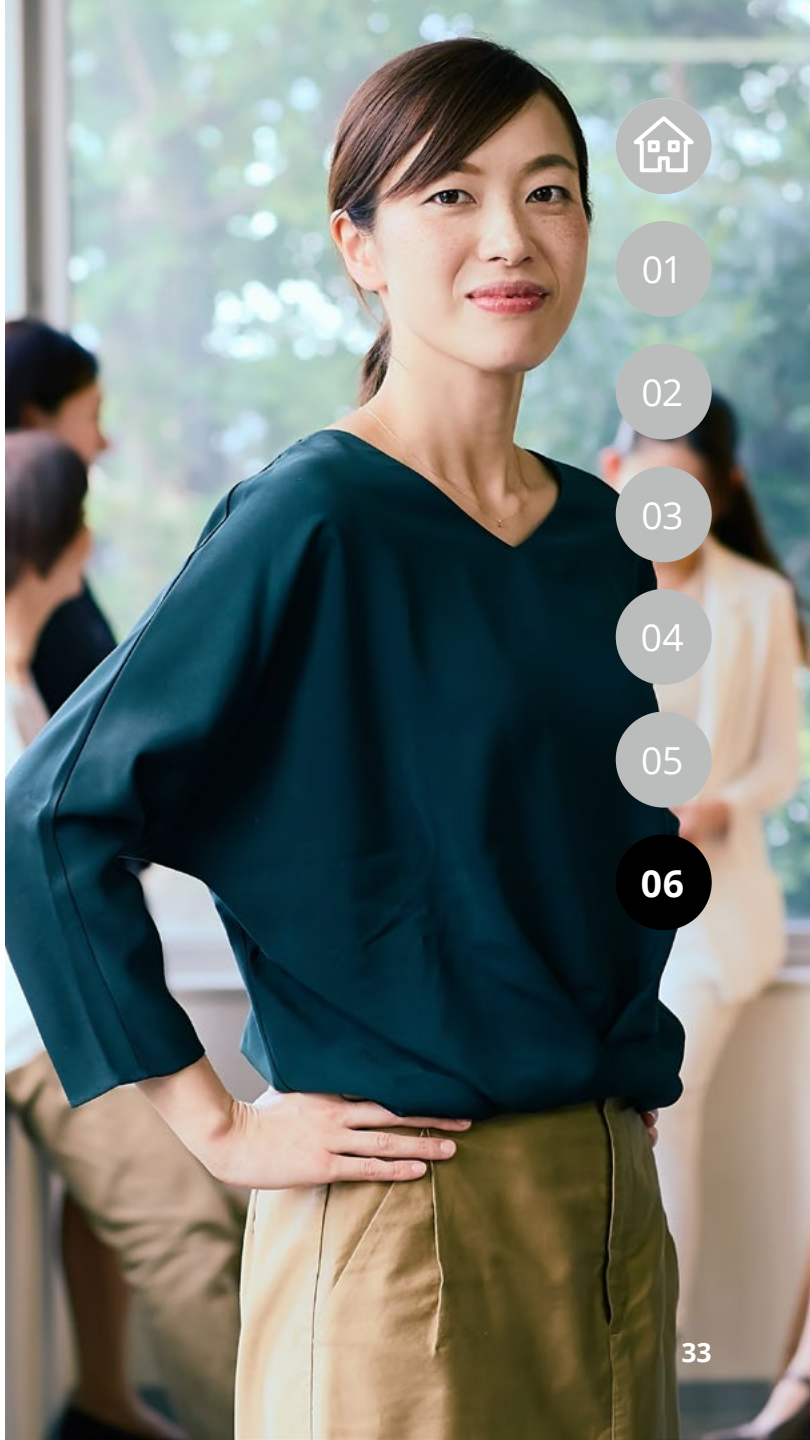

Provide education on AI

Organizations should remove the ambiguity surrounding what it means to work in AI and showcase the numerous opportunities in the space beyond just engineering and technical science roles. Women across a wide range of academic and professional backgrounds have the ability to excel in artificial intelligence, as a career in AI encompasses many different roles, including in product management, user experience, data science, and AI ethics just to name a few.

To encourage the gender diversity needed to create stronger AI systems, organizations should inform women of the different opportunities working within artificial intelligence—that includes extending their recruiting efforts, starting on college campuses to search for young women, prioritizing diverse backgrounds and aptitudes over specific skillsets. Beyond that, businesses should promote a culture of continuous learning and provide women interested in AI professional development opportunities to unlock their potential.

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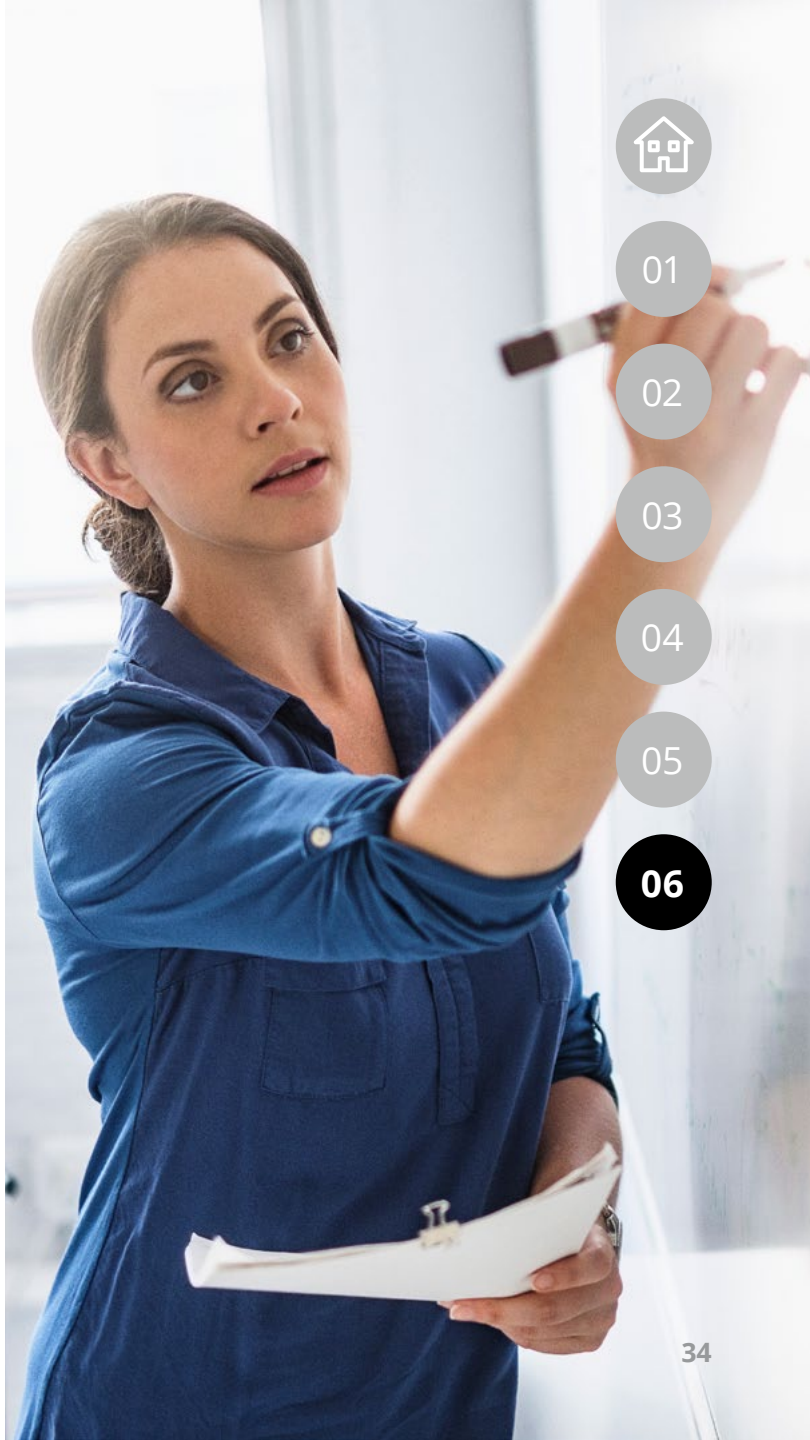
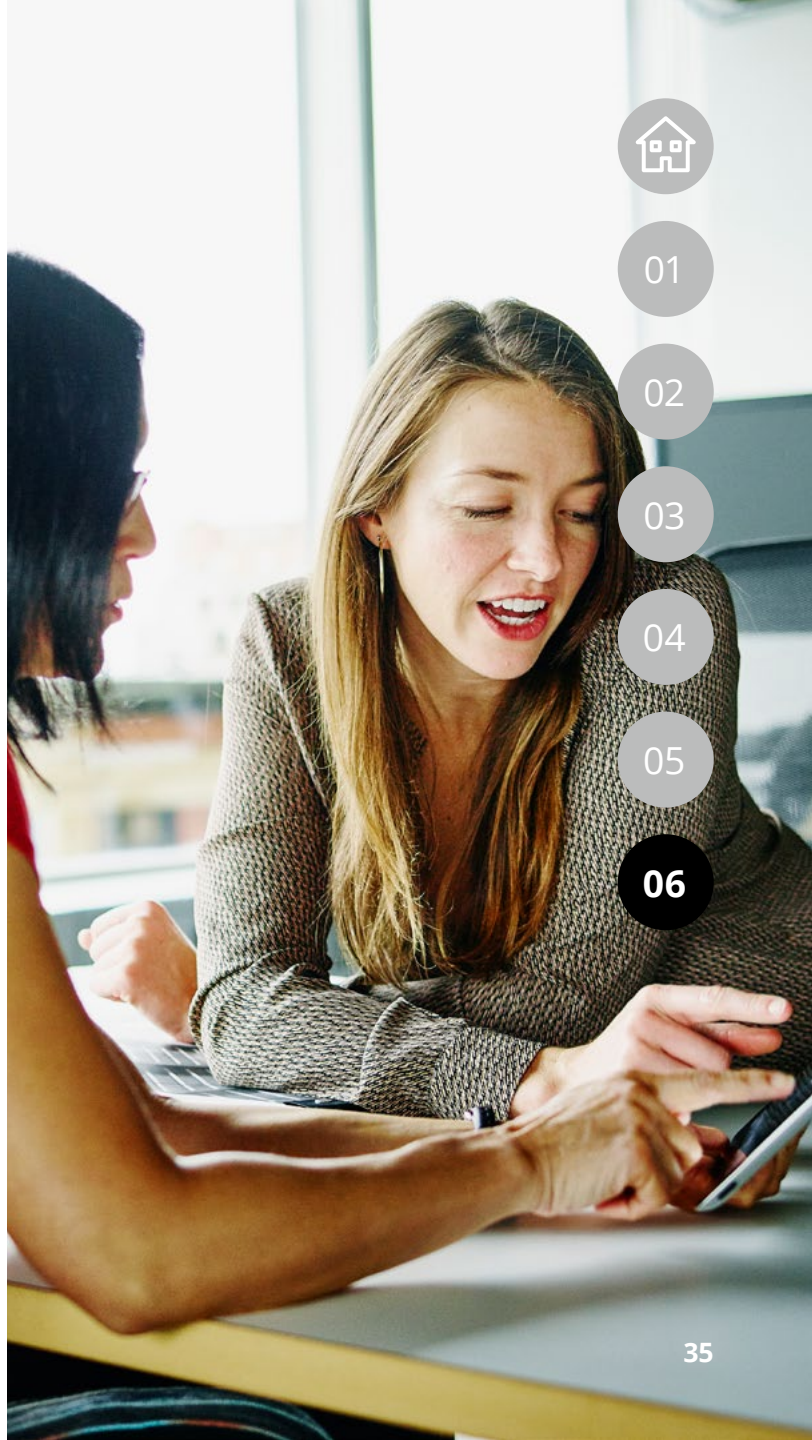


Mentor future women in AI

Mentorship was a key driver in the success behind many of our female executive interviewees—it helped them identify opportunities, set expectations, and overcome barriers in their careers on their way to becoming leaders in AI. To develop the next wave of leaders in AI, today's executives—both men and women—should take it upon themselves to find and mentor women with artificial intelligence ambitions.

While organization-designed programs can have their benefits, informal and authentic mentorship can have even more influence on a mentee's trajectory. Building an authentic mentor-mentee relationship takes effort, and responsibility often falls upon the individual mentor, but it can pay dividends in helping women in AI get the most out of their career and provide lasting, differentiated impact on their organization.

Today's executives—both men and women—should take it upon themselves to find and mentor women with artificial intelligence ambitions.

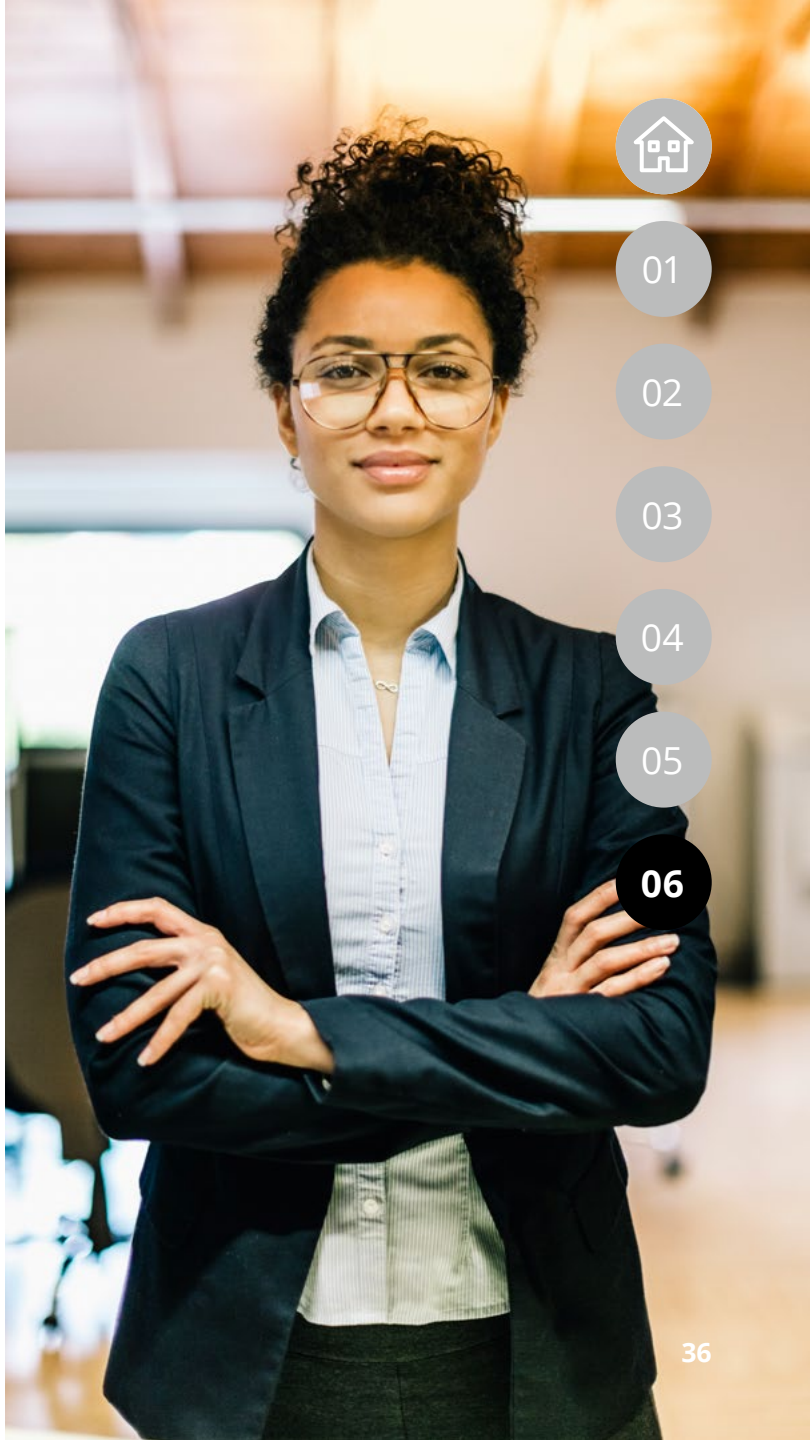


Go beyond formal programs—create a culture of diversity and inclusion at all levels

Organizations should emphasize establishing a culture that actively promotes gender diversity and inclusivity, particularly at the leadership levels, to help recruit and retain more talented women. Creating organizational programs or groups to address gender diversity is likely not enough on its own. Tellingly, the majority of women in AI surveyed did not think organizational initiatives (such as groups or networks for women in AI, or family-oriented benefits) on their own will make the AI space more equitable, or viable, for women.

Creating a culture of inclusivity means constantly searching for and eliminating biases and discrimination against women in the workforce, while at the same time placing deserving women into organizational opportunities that have historically been underrepresented by female employees. Such a culture can be the foundation of any business in which women can gain the equality they deserve in AI.

As part of that culture, organizations should be accountable and transparent in disclosing any gender gaps in AI within their workforce, as well as what mechanisms they plan to put in place to address that gap. Data-based organizational diversity goals can be a powerful tool in addressing unequal representation in AI. It can be difficult to change a problem that is not being quantified.



In summary, the future for women in AI is bright

AI is still a nascent field in which relatively few people have leading expertise, and as such many organizations and their workforces are just beginning their AI journeys. There is still time for organizations to close the gender gap in AI—organizations that can bring more women into their AI teams can not only bring much needed gender equality to the field, but also bring more value to their business and customers. While it is surely difficult to change a gender-biased problem that is not being quantified, companies globally are realizing the value that gender diversity can offer in AI.

There's still work to do, but a shift is on the horizon. *The future for women in AI is promising.*

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Executive Director of the Deloitte AI Institute
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Appendix

Special thanks to our contributing AI leaders

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Report methodology

Using an online double blinded survey, we surveyed N=200 experts on their histories in the AI/ML field. Experts were chosen based on resume and personal experience information volunteered by the experts. All experts selected residence and employment in the United States. All experts identified a minimum education of at least one college degree. A quota of 25% male/masc-identifying subjects was installed to ensure a representation of other genders that are not as common in the AI/ML industry.

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    Using multiple choice questions, we collected information about the experts' demographics and professional experiences. Topics covered included educational history, interpersonal interactions at every stage of the job search cycle, and company policies or federal/state laws that would affect how the AI/ML industry approaches hiring. The demographics questions allowed us to track trends across gender, race, sexuality, and ability in the AI/ML industry.
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