

**Deloitte.**



# Women in AI

Deloitte AI Institute

## About the Deloitte AI Institute

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The image shows a large, modern office hallway with a white wall on the left. On this wall, the word "Deloitte" is written in a large, bold, black sans-serif font. The letter 'e' at the end of the word is a small green dot. To the right of the wall is a glass-walled office space with a blue carpet and modern blue armchairs. The ceiling has recessed lighting and a green exit sign is visible in the distance.

# What's inside

01

## **Setting the scene:**

The state of women in AI today

4

02

## **Women's value in AI:**

Why gender diversity matters

6

03

## **Leadership perspectives:**

What the top women in AI have to say

9

04

## **Why more talented women do not enter AI**

22

05

## **Retaining women in AI:**

What makes them stay (and go)

25

06

## **The path forward:**

How to create a better future for women in AI

27

Setting the scene:

# The state of women in AI today

Enterprises across industries today face a common barrier to achieve their AI goals—talent.<sup>1</sup> Lacking the necessary AI skills, many organizations are ramping up their AI hiring while looking to diversify their talent sources.<sup>2</sup> 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 US, with hiring growth for the role increasing 74 percent annually over the past four years.<sup>3</sup>



01

02

03

04

05

06

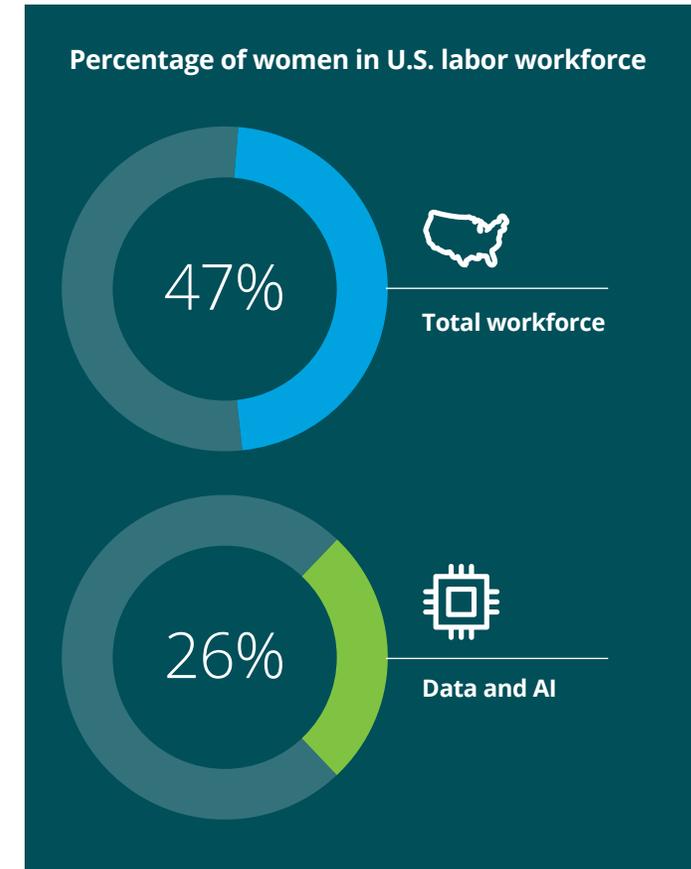
## Setting the scene: The state of women in AI today

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.<sup>4</sup> Furthermore, in 2019 women received the majority of graduate certificates, master’s degrees, and doctoral degrees from US institutions.<sup>5</sup> A 2020 World Economic Forum report, however, found that women make up only 26 percent of Data and AI positions in the workforce,<sup>6</sup> while the Stanford Institute for Human-Centered AI’s 2021 AI Index Report found that women make up just 16 percent of tenure-track faculty focused on AI globally.<sup>7</sup>

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.<sup>8</sup>

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<sup>9</sup> who have risen to AI leadership positions within their organizations in addition to surveying individuals<sup>10</sup> 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 who do not could be handicapping themselves.



01

02

03

04

05

06

# 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:

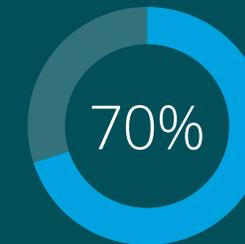
- Goldman Sachs research found that companies with “diverse” boards (Goldman did not define “diverse” but said the emphasis was on women) performed stronger in public markets. Organizations with at least one diverse board member increased their average share price by 44 percent in their first year after going public, a significantly higher figure than companies with no diverse members (13 percent).<sup>11</sup>
- Research from the MSCI Women's Leadership Index shows that since 2016, publicly-traded large, mid and small-cap companies in the US,<sup>12</sup> Canada,<sup>13</sup> and Europe<sup>14</sup> 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.<sup>15</sup>

A more diverse workforce is better tooled to identify and remove AI biases as they interpret data, test solutions and make decisions.

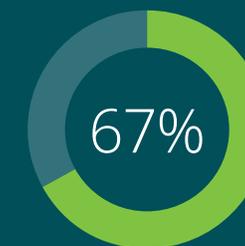
## The business case

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 agree:



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.



01

02

03

04

05

06

## Women's value in AI: Why gender diversity matters

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.<sup>16</sup> 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.<sup>17</sup>

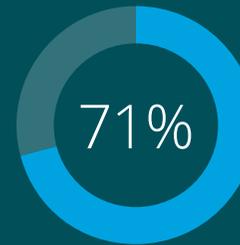
Levers for diversity include gender, race, socioeconomic background, work experience, age, ability, privilege, and experience with discrimination, among others. Having diversity across a number of criteria helps ensure a wide range of perspectives and lived experiences are incorporated into the design 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,<sup>18</sup> as AWS' Allie 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."

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### The AI case

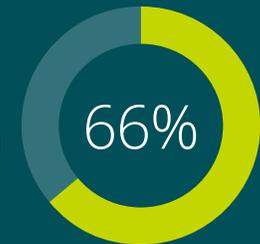
Deloitte's survey with women and men working in AI and machine learning reinforced that having more women in the space improves the design and functionality of AI systems.

#### Respondents strongly agree:



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.



01

02

03

04

05

06

## Women's value in AI: Why gender diversity matters

The importance of diversity within AI teams is connected to one of the biggest challenges facing artificial intelligence today: biases within AI systems.<sup>19</sup> 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 tooled 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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01

02

03

04

05

06