

# New York State Emerging Technology Advisory Board

Recommendations for making  
NY a leader in responsible AI



# Table of contents

|           |   |
|-----------|---|
| <b>3</b>  | <b>Letter from the co-chairs</b>                    |
| <b>4</b>  | <b>The Emerging Technology Advisory Board</b>       |
| <b>5</b>  | <b>Abstract</b>                                     |
| <b>7</b>  | <b>New York’s AI landscape</b>                      |
| 15        | Inspirational AI stories from external stakeholders |
| <b>16</b> | <b>Responsible AI</b>                               |
| <b>18</b> | <b>Vision and ambitions</b>                         |
|           | Adoption at scale                                   |
|           | Democratization of AI                               |
|           | Resilience and equity within the workforce          |
| <b>20</b> | <b>Recommendations</b>                              |
| <b>40</b> | <b>Next steps</b>                                   |
| <b>42</b> | <b>Acknowledgements</b>                             |
| <b>44</b> | <b>Endnotes</b>                                     |



# Letter from the co-chairs

New York has a long history of capitalizing on major technological breakthroughs and economic shifts. Few other states have adapted as successfully to these profound changes, which have shaped workers' lives and industries' fate. Today, New York State has, once again, a unique opportunity to pioneer and embrace emerging technologies. To do this, New York must build a thriving ecosystem that supports innovation, deploys innovations at scale, and provides equitable opportunities for its people and its workforce.

In March 2024, Governor Hochul asked us to establish and lead an independent advisory board. This board aims to develop recommendations for how New York State can best support and grow a thriving ecosystem for emerging technologies. The Emerging Technology Advisory Board (ETAB) comprises private sector leaders, and leaders from globally renowned nonprofit and foundation organizations (see [here](#) for Governor Hochul's June 13, 2024 press release). These board members are actively involved in civic life and duty. Through their work on the ETAB, they are dedicating their expertise and contributions to advancing New York's interests. The ETAB dedicated the first six months to developing recommendations that achieve one unified vision: Elevate New York as an AI leader.

AI development is fast-moving and exciting; however, the ETAB acknowledges there remains uncertainty about the scale, speed of adoption, and consequent impacts on the workforce. Being a successful leader in AI will require agility and adaptability, and the State should frequently reassess its approach, and the recommendations in this report, as AI continues to be deployed and the landscape evolves.

The ETAB is proud to provide Governor Hochul with this report, which sets forth bold, ambitious, and powerful recommendations based on the latest research and AI developments. These recommendations reflect the diversity of thought and experience provided by the Board and other stakeholders, shaping the future of emerging technologies. They build on the Governor's existing, substantial efforts and New York's global reputation as a place where businesses come to grow, innovate, and create future technologies. The recommendations are designed to guide both the State and organizations across New York in driving an innovative AI ecosystem, ensuring responsible AI deployment at scale, fostering a resilient workforce, and empowering all New Yorkers with equitable access to the benefits of AI.

Together, we can secure New York's position at the forefront of this transformative era.

Sincerely,



**Arvind Krishna**  
Chairman and CEO, IBM  
Co-Chair, ETAB



**Dr. Tarika Barrett**  
CEO, Girls Who Code  
Co-Chair, ETAB

# The Emerging Technology Advisory Board

Together, the Advisory Board's immense contributions and dedicated efforts reflect the critical need to thoughtfully and boldly elevate New York as a leader in this pivotal moment. The report's ambitious, independent recommendations are a testament to the insightful perspectives and inspiring collaboration of the Advisory Board members. As such, this report is a culmination of contributions from the Board as a whole; each item included may not directly reflect every member's point of view nor should they be read as mandates for organizations.



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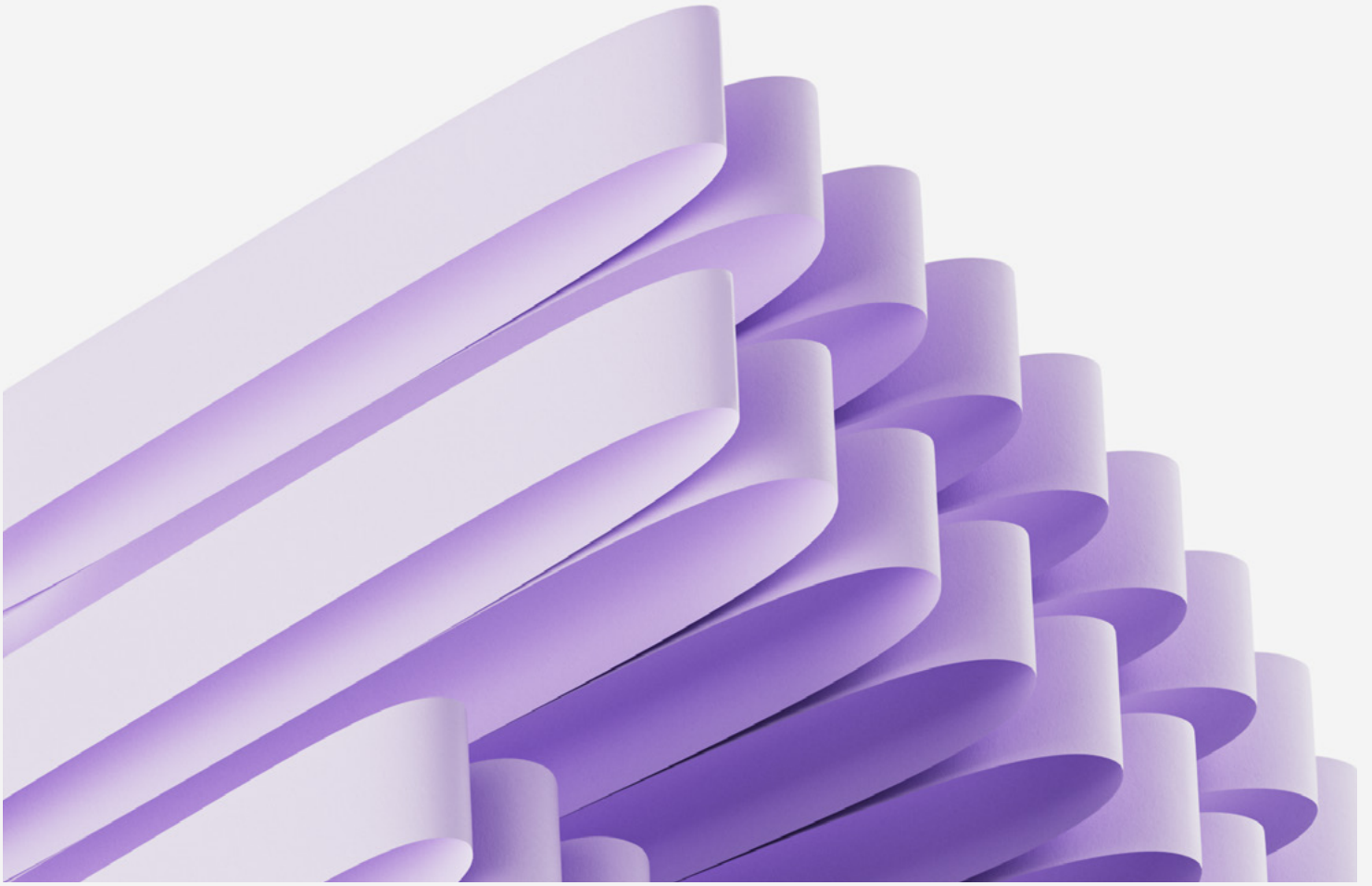
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# Abstract

# Making New York a leader in advancing responsible AI

In 2022, the widespread introduction of generative AI (gen AI) rapidly transformed the technology landscape, creating unprecedented global opportunities. For New York, gen AI could mean an economic expansion of up to \$100 billion from productivity improvements alone.<sup>1</sup> Given the potential for significant disruption in this critical moment, Governor Hochul asked the Emerging Technology Advisory Board (ETAB) to develop a plan for a thriving emerging technology ecosystem in New York. The first six months of their effort outlined recommendations that could make New York the leader in advancing responsible AI.

The Advisory Board took a comprehensive approach to developing the recommendations outlined in this report. First, the Advisory Board reviewed New York's AI landscape. The effort validated the state's foundational position of strength. New York's robust economy, extensive tech talent pool, academic excellence, and legacy for innovation underpin the state's promising potential to be a leader in AI. The assessment also identified challenges the state may face, primarily related to supporting and empowering its workforce to thrive in the AI transition, and ensuring equitable access to resources to enable all New Yorkers to leverage and benefit from the opportunities AI offers.

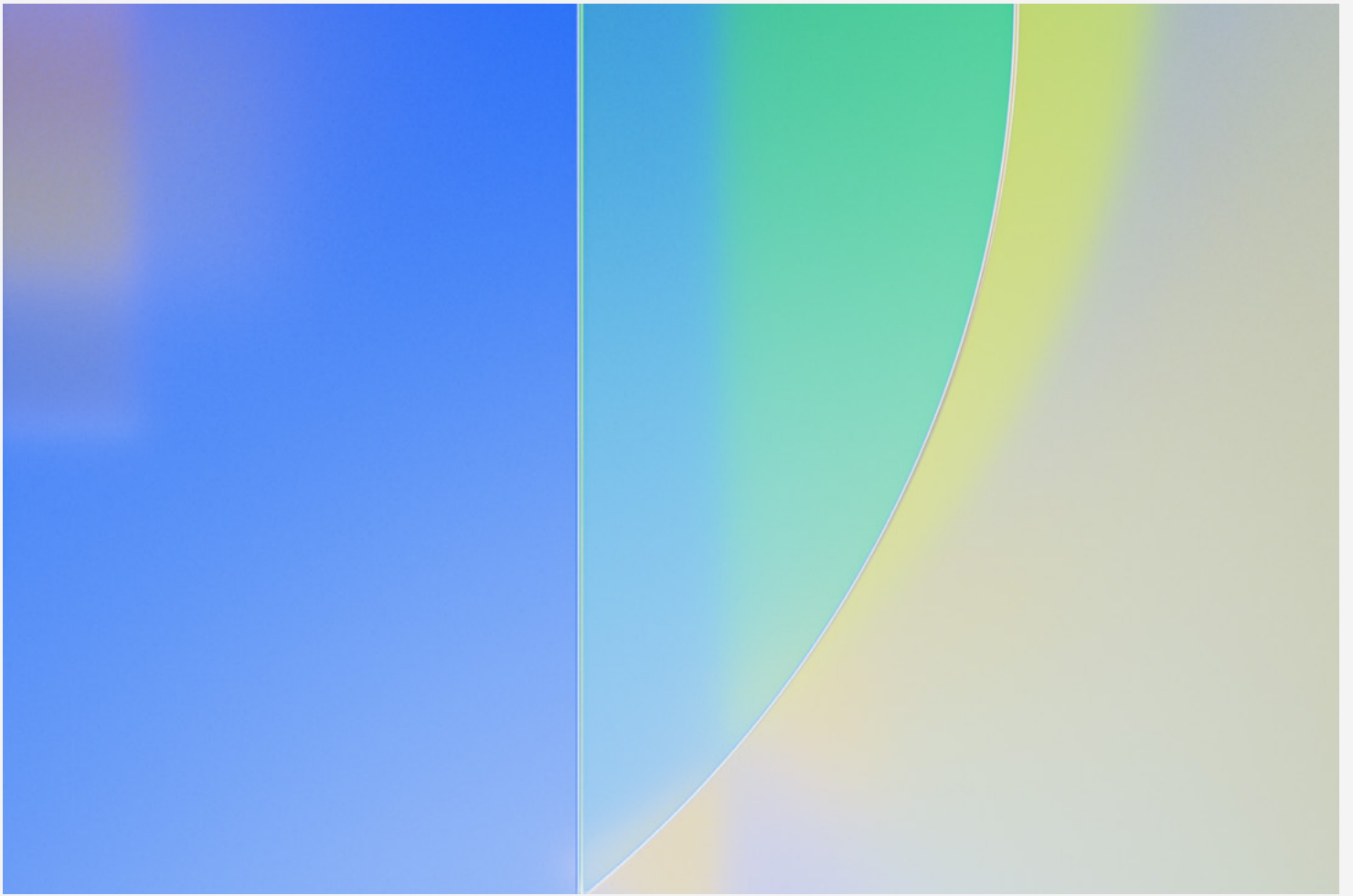
Grounded in these learnings, the Advisory Board engaged over 40 external stakeholders and experts to gain a deeper understanding of the nuances and complexities in the challenges identified, how those challenges manifest across New York organizations and communities, ongoing initiatives aiming to address the potential challenges, and others aiming to build on New York's position of strength. The stakeholder interviews also revealed bold ideas and perspectives on potential recommendations to include in this report.

The Advisory Board reflected on the insights and ultimately aligned on three ambitions for the State of New York to pursue:

- Enable all New York businesses to responsibly deploy AI at scale
- Commit to AI literacy for at least 15 million New Yorkers by 2030, democratizing AI in the process
- Ensure every worker in New York can thrive in the new AI landscape

These ambitions are supported by 9 recommendations that foster public-private partnerships and balance the priorities of timely impact and sufficient scale.





# New York's AI landscape

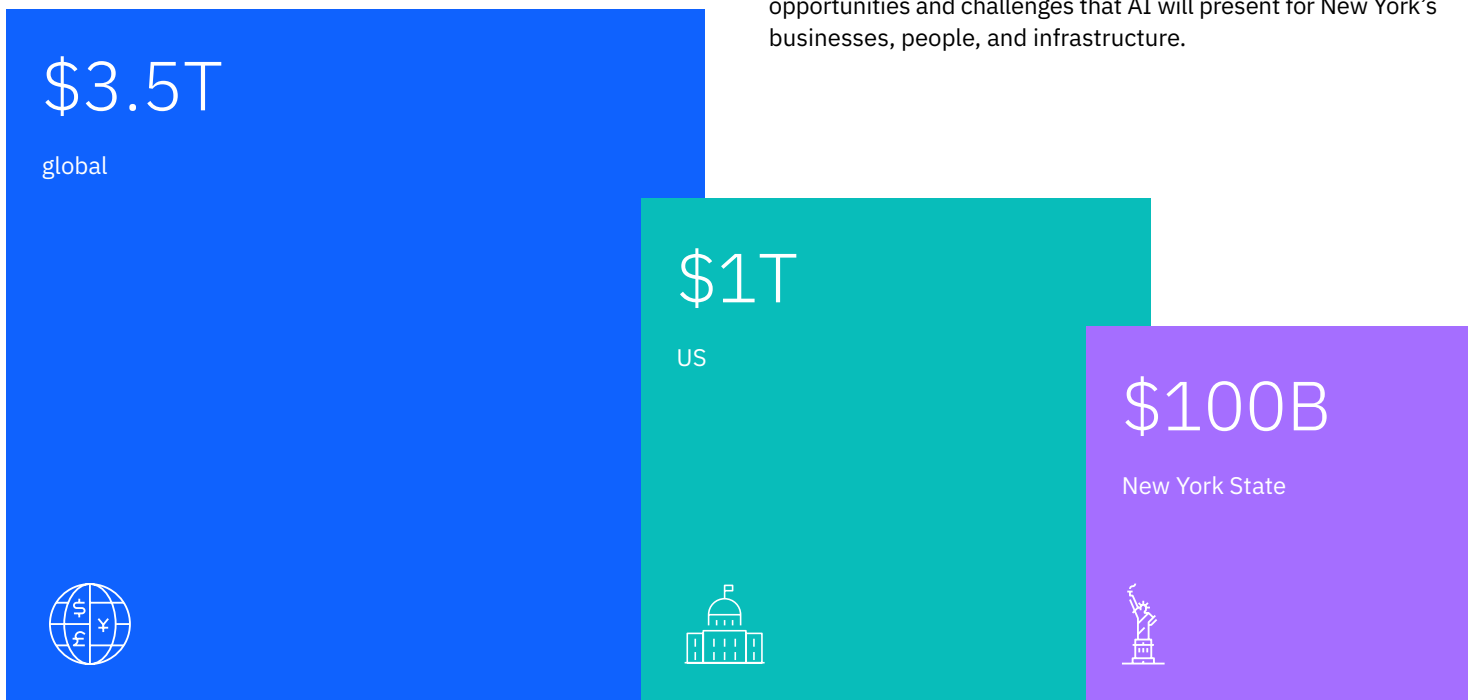
# AI presents a tremendous opportunity globally and in New York

AI has rapidly transformed the technology landscape, creating unprecedented opportunities. The McKinsey Global Institute estimates AI could contribute up to \$17–26 trillion to the global economy annually.<sup>2</sup> As an example, by improving worker productivity through technology and better use of time, AI could add ~\$3.5 trillion (approximately 4%) to the global economy. This implies a productivity impact for the US estimated at \$1 trillion, of which New York is expected to make up a disproportionate share of up to \$100 billion. New York is uniquely positioned due to its high-productivity industries, which are digitally mature and ripe for AI adoption.<sup>3</sup> AI presents opportunities worth seizing.

Beyond the economic impact, AI has enormous potential to improve our lives in ways both subtle and surprising. Machine learning tools can analyze medical images, such as X-rays and MRIs, to help medical professionals diagnose diseases faster and more accurately. AI algorithms can monitor driving patterns and modify traffic signals to reduce congestion, commute times, and emissions. AI-powered analysis enables universities to assess student needs and offer better targeted support to address them.<sup>4</sup> To make these and many other benefits a reality, AI technologies will need to be part of a whole ecosystem that includes innovations in technology, education, business, and society.

To chart the course to a thriving AI ecosystem in New York, the Emerging Technology Advisory Board (ETAB) examined New York's current AI landscape, including New York's ability to realize the potential of AI; the groundbreaking investments New York has made in AI and AI-adjacent industries; and the opportunities and challenges that AI will present for New York's businesses, people, and infrastructure.

Projected economic benefit from AI-augmented productivity





# New York is poised to capitalize on the AI opportunity

With its deep-rooted financial infrastructure and expertise, New York holds a strategic advantage in driving AI growth. Its leadership in private investment markets positions the state to significantly enhance its AI investment landscape. Over the years, the state's commitment to innovation has sparked a remarkable surge in AI VC funding, far outpacing investment growth in other areas.<sup>6</sup>

The state's robust economy is expected to experience growing labor demand, with a net gain of more than 200,000 jobs by the end of the decade.<sup>7</sup> This robust job growth could ease the potential pressures of the job shifts, creating more opportunities for reskilling and upskilling.

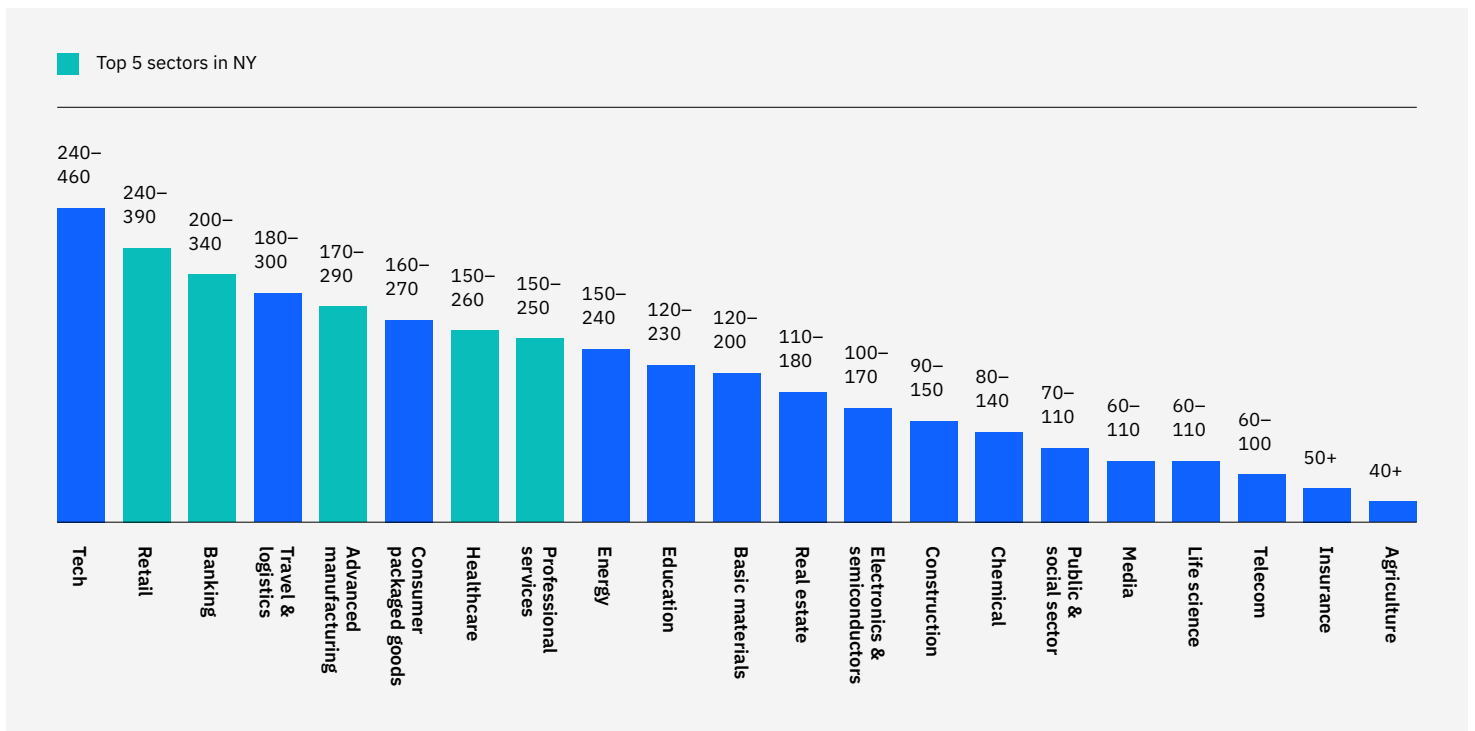
## A robust economy

New York is an economic leader in the US, ranking 3rd nationally in labor productivity.<sup>5</sup> Over half of the state's sectors surpass the national productivity average and have experienced remarkable growth over the past three decades. This surge in productivity can largely be attributed to their embrace of digital technologies. Consequently, these high productivity, digitally mature sectors, such as retail, financial services, and advanced manufacturing, are primed for the adoption of artificial intelligence, positioning them—and New York—ideally for the next wave of technological advancement.

## Extensive talent pool

New York has long been a beacon for tech talent. Not only is the state a top tech talent destination—ranking 3rd nationally—New York City has also become a magnet for tech talent relocations, outpacing all other cities.<sup>9</sup> This influx stands in stark contrast to San Francisco, which saw a net loss during the same period. New York's leading position is driven by its ability both to develop talent in its premier institutions and to attract tech talent to relocate.

The global economic potential of gen AI, \$ billion<sup>8</sup>



### Micron: Harnessing AI for advanced manufacturing

As semiconductor manufacturing becomes more complex and AI increasingly powers the growing demand for semiconductors, Micron Technology has internally deployed AI extensively through its manufacturing processes to ensure that Micron and its future New York workforce remains at the cutting edge. Semiconductor manufacturing involves more than 1,500 individual steps to turn mined silicon into the Micron memory and storage chips that store the data for smartphones, the automotive sector, and other key industries, and Micron uses AI to support a variety of manufacturing processes, including: image analytics, acoustic listening, and thermal imaging. As a result of these AI innovations, Micron has improved worker safety and kept its operations competitive: between 2016 and 2020, worker productivity rose 18%, time to resolve quality issues fell by 50%, time to market for new chips fell 50%, and product scrap production fell 22%.

## Academic excellence

New York has long been a leader in innovation and academic excellence, with 3 of the top 20 US universities for R&D funding in engineering research.<sup>12</sup> Complementing its academic strength, New York hosts leading research labs, such as NYU's CILVR, and private tech companies such as IBM, MongoDB, and DeepMind.

3 of the top 20 US universities for R&D funding in engineering research

## A legacy for innovation and adaptability

New York has a long legacy of pioneering advancements and evolving its economy to lead in emerging technology. The state has birthed countless innovations—from the telegraph (invented by NYU professor Samuel Morse) to photographic film rolls (invented and popularized by Rochester-based Kodak) to Gorilla Glass (invented and commercialized by Corning). But beyond this inventiveness, the state has also successfully navigated numerous economic shifts, transitioning from a manufacturing-based economy to one dominated by financial services and beyond. Today, New York's economy is strategically diversified across technology, media, healthcare, and education. This rich dynamic not only shields it from economic downturns but also sets the stage for a future where new technologies such as AI can be harnessed to their fullest potential.

1st

in tech talent relocations, claiming 15% of all tech talent relocations<sup>10</sup>

↑ 200K

net job gain by 2030

2nd

nationally in science and engineering degrees conferred<sup>11</sup>

↑ 32%

rise in AI VC funding over the last 9 years, outpacing the 2% growth in all other VC deals

3rd

nationally in productivity

# New York is making groundbreaking investments in AI and AI-adjacent industries

## **NY SMART I-Corridor: Developing a semiconductor cluster**

In July 2024, the Economic Development Administration designated the New York Semiconductor Manufacturing and Research Technology Innovation Corridor (SMART I-Corridor) as a Tech Hub. The NY SMART I-Corridor is a consortium of over 100 institutions in the Buffalo, Rochester, Ithaca, and Syracuse Metropolitan Statistical Areas (MSAs) that aims to build a globally leading semiconductor cluster in Upstate New York. Leading partners include Micron Technology, CenterState Corporation for Economic Opportunity, and the University at Buffalo. The Tech Hub applies a comprehensive approach to developing the semiconductor cluster. The \$40 million in federal funding will be used to implement four projects around supply chain expansion, workforce development, commercialization, and governance.<sup>18</sup>

# \$400M

landmark public-private investment to establish Empire AI

New York is continuing its longstanding investments in emerging technology, with a bold vision to advance semiconductors, quantum computing, and AI. Accordingly, the state has implemented strategic programs, policies, and commitment to funding that prioritizes productivity, equity, and sustainability. For example, New York's landmark \$400 million investment to establish Empire AI, a consortium of seven leading universities and research institutions that will collaborate in a state-of-the-art AI computing center, will unlock university research critical to accelerating AI use cases for public good.<sup>13</sup>

New York's simultaneous investments in AI-adjacent industries are key to building a thriving AI technology ecosystem, as semiconductors provide the essential processing power that enables efficiency of AI deployments and quantum computers could accelerate the speed of AI algorithms. Central in the state's investments are:

### **Semiconductors<sup>14</sup>**

- \$100 billion commitment from Micron Technology to create 9,000 Micron jobs, 4,500 construction jobs, and 40,000 indirect jobs
- \$11.6 billion commitment from Global Foundries to generate over 1,500 jobs
- \$10 billion partnership to advance next-generation chips research at NY CREATES Albany
- \$40 million of federal funding from the CHIPS Act to the NY SMART I-Corridor Tech Hub

### **Quantum computing**

- IBM's first ever IBM Quantum System One on a university campus (Rensselaer Polytechnic Institute [RPI]) to accelerate quantum computing research<sup>15</sup>
- \$6.5 million public investment to construct a Quantum Internet Test Bed at Stony Brook University<sup>16</sup>

### **Innovation**

- \$100 million investment from JMA Wireless to relocate its 5G headquarters—the only US-owned 5G campus—to Syracuse<sup>17</sup>
- \$2.5 million annually to NYSTAR Innovation Hot Spots, which serve as startup incubators and regional hubs connecting technology initiatives across their region

The Emerging Technology Advisory Board aims to build on these longstanding investments, a testament to Governor Hochul's relentless commitment to lead at the forefront of emerging technology.

# As New York continues to embrace AI, the state could face challenges

## Strengthening workforce and talent development

AI is likely to transform the employment landscape. McKinsey estimates occupational shifts may be required in the New York Combined Statistical Area (CSA) by 2030 as the evolving nature of work likely shifts the mix of jobs in the region.<sup>19</sup> Some of the occupational categories that may face the most shifts are office support workers, customer service and sales, food services, production work, and business and legal professionals.<sup>20</sup> It must be a priority to responsibly support the workforce through this transition, for example, by providing upskilling and reskilling opportunities, creating high-quality, family-sustaining jobs, connecting workers to employment opportunities, or increasing benefits. By providing resources to support the workforce through this transition, New York could help workers reap the benefits and advantages of AI (e.g. by moving to new in-demand industries).

Employers could disclose the use of AI when it is used in connection with employees' substantive work and to make or assist in labor and employment decisions. There is an opportunity for New York to monitor the impact of AI on the employment landscape to understand and respond to any negative impact on workers in an agile manner.

New York, along with other traditional tech hubs, faces rising competition for AI talent nationally as the geographic dispersion of AI roles increases. Between 2018 and 2023, New York saw a 1.7 percentage point decline in its share of AI job postings.<sup>21</sup> If domestic and international talent is not retained, that loss could put New York at a disadvantage.

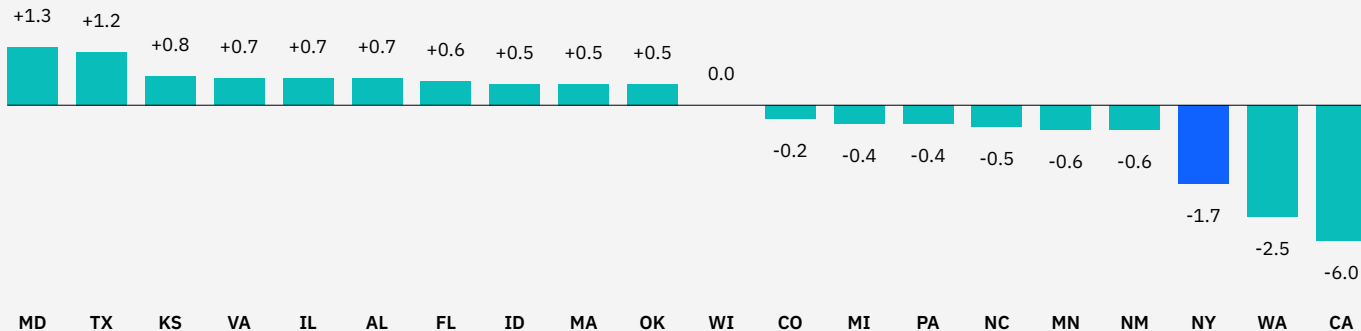
With a longer-term view of its talent pipeline, New York has the opportunity to ensure AI literacy is embedded in the education of its 2.4 million K-12 public school students.<sup>22</sup> Students are well-positioned to learn from and with AI—early exposure could encourage safe adoption as AI becomes mainstream.

### Ensuring workers can thrive

To ensure workers thrive, in addition to initiatives mentioned in this report, including education, training, and job placement, the State could take additional steps consistent with its labor and employment policy for other industries and new technologies. These include:

- Labor peace, prevailing rate, and domestic content preferences
- Disclosure and bargaining of AI use in the workplace
- Robust worker data privacy, bias, whistleblower, and discrimination protections
- Prioritizing employee retention
- Providing for direct support for displaced workers, including enhanced UI benefits and COBRA premium assistance
- Ensuring that public spending, investments, and subsidies only go to applicants who develop or implement AI to create additional jobs or support existing ones, as opposed to displacing workers

Change in each state's share of AI job postings between 2018 and 2023



### Girls Who Code: Closing the gender gap in tech

Girls Who Code (GWC), an international nonprofit working to close the gender gap in tech, is leading the movement to inspire, educate and champion girls, women and non-binary people, with a special focus on historically underrepresented groups, to become changemakers in tech. In 2024, [an independent study](#) found that high school students who participate in GWC's summer programs are more likely than their peers to major in computer science-related fields in college. The impacts of their holistic approach to computer science education, grounded in project-based learning, community, and real-world applications of emerging technology, are consistently demonstrated among students historically underrepresented in computing, including Black and Hispanic or Latino/a students. These efforts highlight the crucial role of targeted educational initiatives in fostering gender diversity in tech.<sup>23</sup>

## Ensuring equitable representation and access to resources

All too often, technological transitions leave underrepresented groups behind. These groups often lack the resources, such as higher education and financial funding, required to succeed in transitions. For example, there has been a long history of inequitable distribution of VC funding. In 2022, only ~2% of VC funding in the US was committed to female-founded companies, ~1% committed to Black-founded companies, and ~1.5% committed to Latino-founded companies.<sup>24</sup> The inequity in access to resources could lead to disproportionate impacts of AI across the state's workforce. Experts estimate the effects of labor market churn could have uneven distributional impacts, which could manifest as a higher risk of impact for low-wage workers (4.2X) than high-wage workers, women (1.3X) than men, non-college-educated workers (1.6X) than those with at least bachelor's degrees, and Hispanic workers (1.2x) than white workers.<sup>25</sup> Although AI has the potential to follow the same inequitable path as other technological transitions, New York can make proactive, intentional interventions to bridge the equity gap.

Equitable representation in AI is not just about achieving better outcomes for the individuals, but also for the technology itself. For example, Dr. Joy Buolamwini has shown that because many of the datasets that were originally used to train AI models were not representative of the world at large, many AI tools have higher misidentification rates for people of color, which can have devastating effects.<sup>26</sup> Equitable representation in AI development, along with widely prescribed norms, can help improve the technology's abilities so it can be deployed responsibly and avoid biased outcomes for consumers, workers, and the public at large.



Low-wage workers are 4.2x more likely to be affected than high-wage workers.



Women are 1.3x more likely to be affected than men.



Hispanic workers are 1.2x more likely to be affected than white workers.



Non-college educated workers are 1.6x more likely to be affected than those with bachelor's degrees.

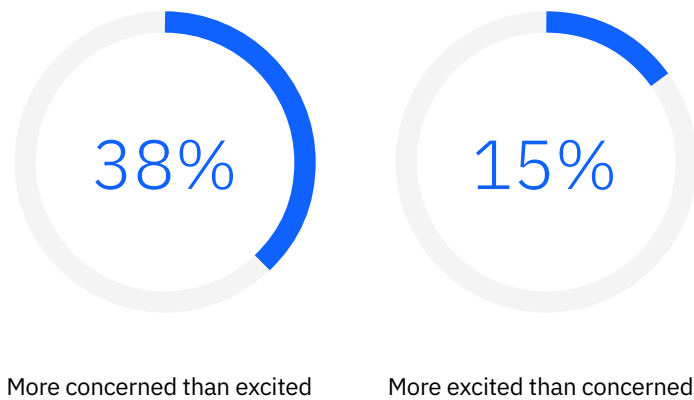


Black, Hispanic/Latino, American Indian, and Alaskan Native graduates in higher education represented less than 25% of graduates<sup>27</sup> while making up ~32% of the US population.<sup>28</sup>

## Building trust in AI

AI can't be successfully deployed at scale if it's not trusted. Currently, 50% of New York constituents fear AI, expressing concerns about the lack of transparency in its deployment and the potential for bad actors to exploit its use cases.<sup>29</sup> A recent study also found that the less people know about AI, the more they worry about it.<sup>30</sup> Building public awareness of AI's applications and limitations is a prerequisite to building New Yorkers' trust of AI, a challenge the state could be well-positioned to take on.

### American attitudes about increased use of AI:<sup>31</sup>



## Continuing to lead in productivity

Despite being a national leader in overall productivity, New York's productivity growth lags the national average and states including California, Washington, and Massachusetts.<sup>32</sup> AI-driven automation and workforce reskilling could substantially boost the state's productivity growth, creating more and higher paying jobs for New Yorkers.

New York's labor productivity growth from 2019–23 (0.9%) lags states like California (2.4%), Washington (3.3%), and Massachusetts (2.3%).

## The ETAB supports NYS's efforts to address broader AI-related challenges

The ETAB aims to address these challenges and strengthen the foundation for New York's leadership in AI. We also acknowledge there must be broader efforts to address the complexity of some challenges beyond the scope of the Board's charter. The state's energy infrastructure capacity is a prime example. Electricity consumption by AI data centers is expected to increase from 2.8% of New York's supply today to 3-7% by 2030.<sup>33</sup> This is an additional pressure on the grid, at a time when the state is actively pursuing its ambitious clean energy transition.<sup>34</sup> In stakeholder interviews, leaders also highlighted their growing concern about losing international talent after significant investment in their development. They continue to face difficulty in attracting and retaining talent in areas with a high cost of living. More must be done to fortify the grid with sufficient carbon-free, reliable, and affordable energy; attract and retain the talent the state seeks; and to support that talent with affordable housing and necessary resources to thrive. The ETAB fully supports the state's ongoing, comprehensive efforts to address these challenges and others.

# Inspirational AI stories from external stakeholders

The Advisory Board engaged over 40 cross-sector stakeholders and experts to get their thoughts about AI—what the challenges and opportunities are, how they manifest in NY, and how they can be remediated or seized. Stakeholder insights surfaced powerful proof points about how AI can transform education, the arts, research, and creative economies.

## **TeachAI: Educating the AI generation**

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TeachAI is an initiative led by Code.org, ETS, ISTE, Khan Academy, and the World Economic Forum. It brings together public and private education leaders and technology experts to help create policy guidance and resources about the safe, effective, and responsible usage and teaching of AI in schools.<sup>35</sup> The resulting AI Guidance for Schools Toolkit helps education system leaders create guidance, includes seven principles for AI in education, and recommends strategies for engaging parents, staff, and student stakeholders.

Pat Yongpradit, Chief Academic Officer of Code.org and Lead of TeachAI has said “My sincere hope is that teachers feel guided and supported by their leaders as we all adapt to the changes AI brings to education.”<sup>36</sup> TeachAI is an example of convening many thought partners and stakeholders together to advance change, as they have brought together private sector companies, national and state government agencies, and policy groups to advance guidance and frameworks.

## **Empire AI: Investing in research for public good**

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Empire AI, a consortium of seven New York-based world-class research institutions, is making strides to secure New York's place at the forefront of AI research. The consortium will create a first-in-the-nation, research-focused AI computing center, powered by clean hydropower. The center will provide grant researchers across the state access to essential computing resources, catalyzing innovation, fostering recruitment of global tech talent, and advancing AI for the public good.

## **NYSCA: Finding the intersection of art and AI**

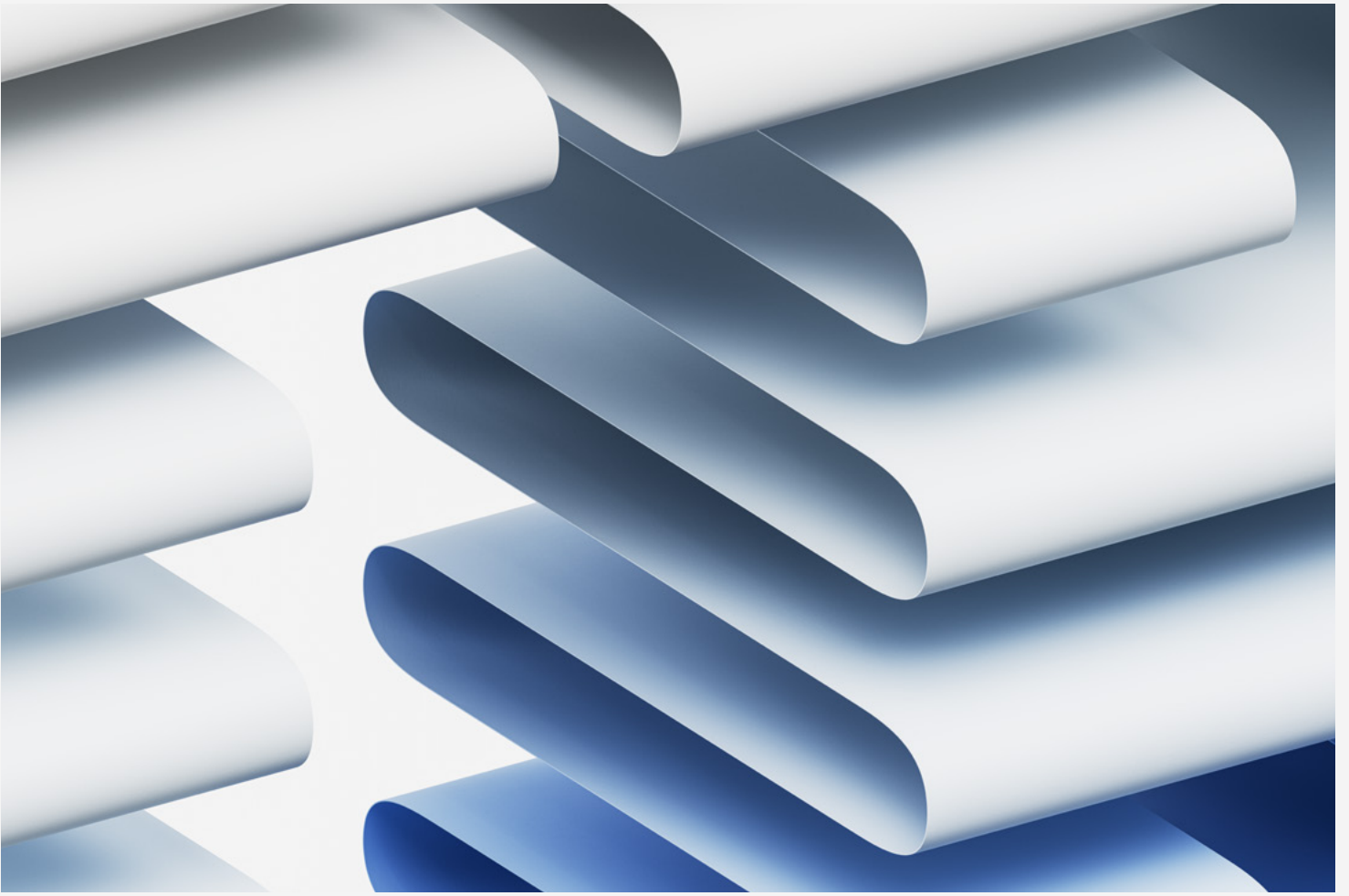
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New York State Council on the Arts (NYSCA) provides grants and other support to advance their mission to “foster and advance the full breadth of New York State's arts, culture, and creativity for all.”<sup>37</sup> As one of NYSCA's values is “the constant evolution of artmaking and creative practice,” NYSCA is interested in the way AI is shaping the landscape of art and artists in New York State. NYSCA highlights the complex impact AI can have on artists and the importance of having artists be a part of conversations about AI development and policy. NYSCA also supports organizations at the intersection of technology and art, which can be a part of educating artists about AI, such as the Buffalo Center for Arts and Technology, which provides mentorship, tutoring, and workforce development.

## **Etsy: Keeping commerce human**

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Etsy has long been a leader in leveraging AI and machine learning to craft a uniquely human shopping experience that connects its community of creative entrepreneurs with tens of millions of passionate buyers around the world. To further its mission to Keep Commerce Human while embracing cutting edge technology, Etsy created a Responsible AI Working Group to govern its exploration of AI. Etsy leverages AI to help sellers more effectively grow their businesses, surface more relevant and inspiring items to buyers that help drive more sales for sellers, and improve the shopping and selling experience for the Etsy community. Etsy's goal in this work is to leverage AI to Keep Commerce Human, while upholding the values of respect, fairness, reliability, transparency, privacy, and security when advancing the adoption of AI.



Responsible AI



# Responsible AI is the throughline of the Advisory Board's recommendations

## IBM: Implementing ethics standards

IBM's AI Ethics Board is the lynchpin of its responsible technology efforts and infuses IBM's principles into business and product decision-making. The AI Ethics Board is steered by senior leaders from across the company, supported by a strong advocacy network and AI Ethics Focal Points within various business units. In addition to actively supporting the principles, the AI Ethics Board shares thought leadership around emerging issues, and in 2023, published various white papers, including "[Augmenting Human Intelligence—the IBM Point of View](#)" and "[Foundation Models: Opportunities, Risks and Mitigations](#)." The AI Ethics Board is one component of IBM's Integrated Governance Program, which allows the organization to adapt many existing processes to address new AI requirements and obligations.

## Kitware: Advancing explainable AI

Kitware is at the forefront of ethical AI research, developing methods and leading studies on how AI can be trusted and how it can be harnessed to benefit society while minimizing risk. Central to its efforts is advancing explainable AI (XAI), a set of tools and resources that can help explain a model's rationale, characterize strengths and weaknesses, and convey an understanding of how the technology will behave in the future. XAI is essential for understanding and trusting complex AI models, especially in critical areas such as healthcare, criminal justice, autonomous driving, defense, and security. In partnership with DARPA, Kitware developed an open-source XAI toolkit for analytics and autonomy applications.<sup>40</sup>

For the purpose of this report, the ETAB defines AI as the simulation of human intelligence processes by machines. While AI offers incredible potential, it could pose a risk if not pursued responsibly. Deploying AI responsibly across New York State is critical to the safety of all New Yorkers and New York businesses. Responsible AI is defined as an approach to designing, developing, assessing, and deploying AI in a safe, trustworthy, and ethical way. Responsible AI encompasses the following principles:

### 1. Fairness and inclusiveness

AI systems avoid bias, treat everyone fairly, and avoid affecting distinct groups differently, with an emphasis on ensuring that community voice actively contributes to AI creation to ensure it addresses, and does not exacerbate, the most pressing challenges.

### 2. Transparency and traceability

Users understand how and why AI systems function the way they do so they can determine appropriate use cases and identify potential limitations, which can include an emphasis on "human-in-the-loop" (HIL) design.

### 3. Reliability and safety

AI systems operate reliably, safely, and consistently, handling exceptional conditions.

### 4. Governance and accountability

Developers, organizations, and policymakers take ownership of responsible deployment of AI.

### 5. Privacy and security

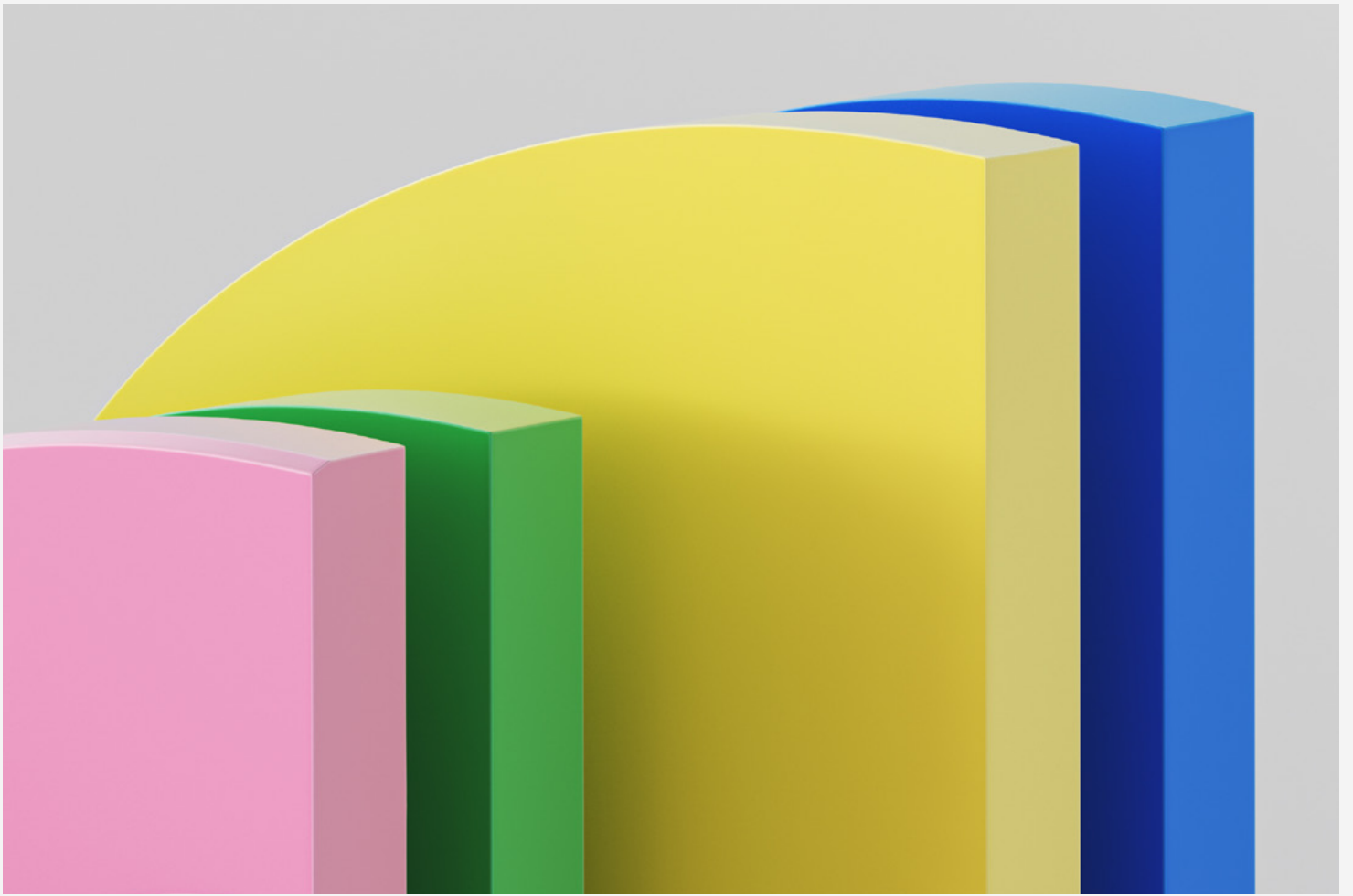
AI systems are continually updated to comply with data protection protocols about the collection, use, storage, and disclosure of data.

### 6. Sustainability

AI systems achieve beneficial outcomes for people and the planet.

The Advisory Board's definition of responsible AI is aligned with the federal Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence released on October 30, 2023.<sup>38</sup>

New York State is a first mover in enacting responsible AI policy, such as Senate Bill 1042A which makes it illegal to share AI-generated explicit images or "deepfakes" of a person without their consent.<sup>39</sup> ETAB's vision for AI builds on New York's progress and prioritizes responsible AI at the core of the state's AI ecosystem.



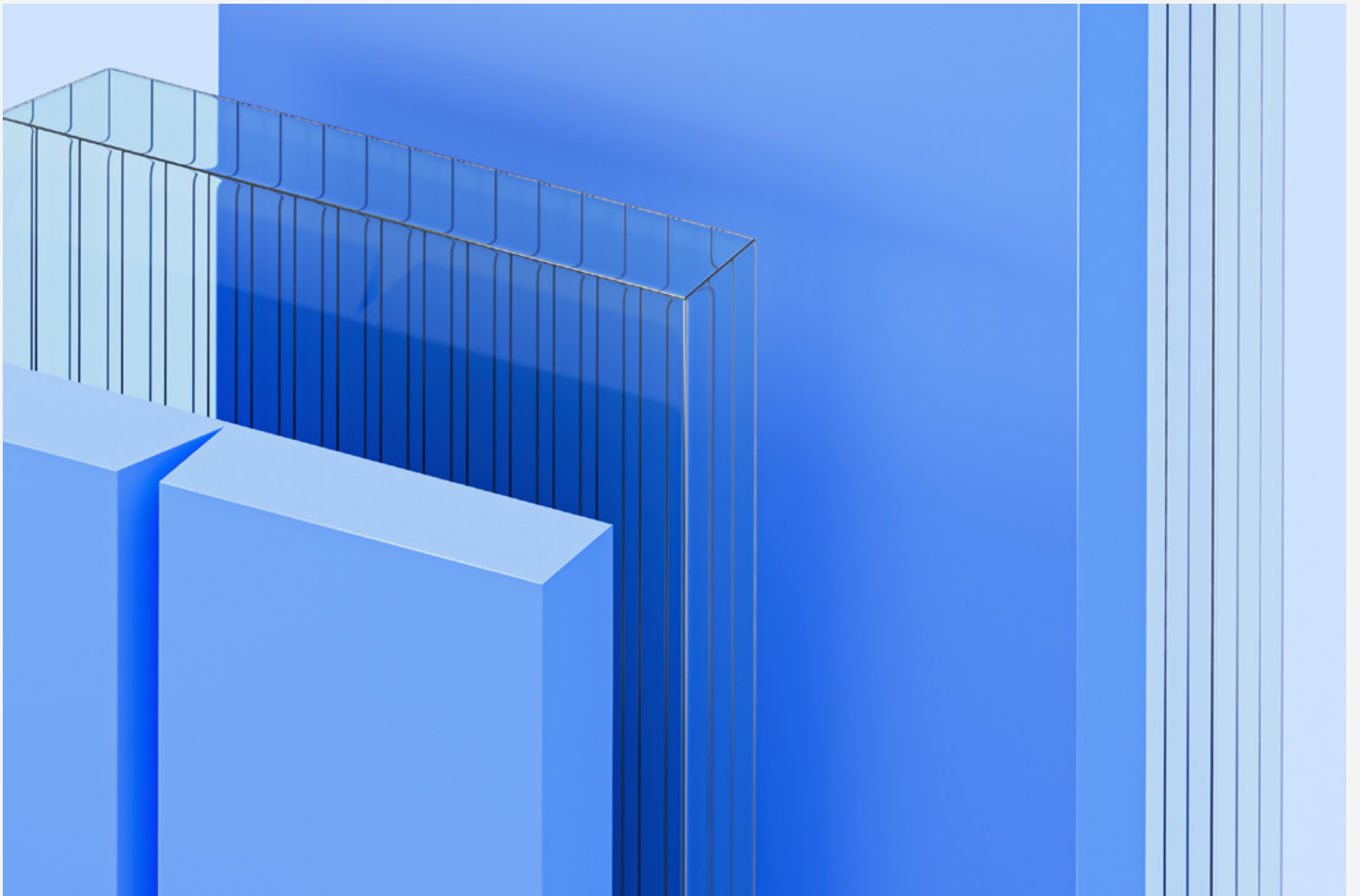
Vision and  
ambitions

# One vision, three ambitions

The Advisory Board is guided by one overarching vision: Elevate New York as an AI leader in innovation, scale, resilience, and equity.

To bring that vision to life, ETAB identified three ambitions that together could help chart the course to a thriving AI ecosystem for all New Yorkers.

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- |    |  |  |   |   |
|----|--|--|---|---|
| 1. | Adoption at scale                          | <b>From:</b> a state where high-productivity industries are primed to adopt AI   | → | <b>To:</b> a state that enables all New York businesses to responsibly deploy AI at scale |
| 2. | Democratization of AI                      | <b>From:</b> a state with ~50% of constituents feeling afraid of artificial intelligence   | → | <b>To:</b> a state committed to AI literacy for at least 15 million New Yorkers by 2030   |
| 3. | Resilience and equity within the workforce | <b>From:</b> a state with potential occupational shifts by 2030 due to the impact of automation and AI, disproportionately affecting underrepresented groups | → | <b>To:</b> a state where every worker can thrive in the new AI landscape                  |
-



# Recommendations













# 9 recommendations for AI in NY

The Advisory Board’s guiding vision and three ambitions are supported by 9 action-oriented recommendations. These 9 recommendations aim to foster public-private partnerships and balance the priorities of both timely impact and sufficient scale required to create a thriving ecosystem for responsible AI adoption in New York.

## Each of the recommendations includes several relevant details:

- **Context:** Outlines the problem statement that the recommendation addresses
- **Scope:** Describes concrete actions that could be taken by the State, ETAB companies, and other third parties
- **Metrics:** Defines metrics that could be used to track progress of recommendations. The metrics are often the same or similar data points referenced in the Context section, with the intent that the recommendation improves the baseline
- **Time horizon:** Quantifies the expected time until the recommendation delivers measurable results
- **Potential public partners:** Identifies the category of governmental agencies the Advisory Board believes could be important partners in the implementation of the recommendation
- **Resource considerations:** Describes the resources required to deliver on the recommendations
- **Next steps:** Outlines the first 2–3 steps the potential public partners could take to move forward with the recommendation

### Estimated timeline for recommendation rollout

| Time horizon     |  <b>Short term:</b><br>Launch can likely occur in <1 year |  <b>Medium term:</b><br>Launch can likely occur in 1–3 years |  <b>Long term:</b><br>Launch can likely occur in 3+ years |
|------------------|--|---|--|
| <b>Scale</b>     | 1A. Accelerate the development of AI solutions to critical problems by promoting structured collaboration                                    |   |   |
|                  | 1B. Advance deployment of AI in SMBs and nonprofits by creating a ‘Responsible AI Playbook’  |   |   |
|                  | 1C. Help SMBs integrate AI tools into their operations through high-touch training and technical assistance                                  |    |  |
|                  | 1D. Grow and attract AI and AI-adjacent startups by promoting existing pool of extensive New York State resources                            |    |  |
| <b>Literacy</b>  | 2A. Democratize AI skill building by providing K–12 AI education resources to New York public schools  |    |  |
|                  | 2B. Empower all New Yorkers to safely and confidently use AI through a multi-faceted public awareness campaign                               |    |  |
| <b>Workforce</b> | 3A. Create paid internship and apprenticeship opportunities in AI and AI-adjacent jobs for under-represented college students                |    |  |
|                  | 3B. ETAB companies pledge to support the New York AI ecosystem through upskilling efforts  |    |  |
|                  | 3C. Strengthen pipelines to new jobs for displaced workers by supporting reskilling efforts  |    |  |

# Accelerate the development of AI solutions to critical problems by promoting structured collaboration

## NYU Langone: Accelerating medical research to improve patient outcomes

NYUTron, NYU Langone’s health-system scale large language model, accurately predicts operational and clinical outcomes, such as in-hospital mortality rate, based on inputs from structured and unstructured clinical notes.<sup>42</sup> However, the data and, therefore, the model, are limited to patients at NYU Langone. A state-wide de-identified dataset of clinical notes could further improve NYUTron’s performance and, consequently, provide valuable predictions for the patient’s care team to guide the patient’s clinical care.

## Context

Robust data is the foundation of all AI models, and organizations across New York are harnessing their extensive datasets to advance AI’s potential. However, stakeholder interviews revealed that organizations in a number of industries and functions—including utilities, workforce development, and healthcare—struggle to access data beyond their client, customer, or patient base. They also often lack the resources and incentives to overcome barriers required to develop, maintain, and harness the usefulness of comprehensive datasets across their respective industries—datasets that could in turn unlock significant benefits for the public good.

## Scope

To support AI deployment in highly beneficial use cases, NYS could convene and promote structured collaboration between relevant state organizations, industry leaders, labor unions, digital rights experts, and academic institutions to develop comprehensive de-identified datasets. The structured collaboration would enable the leaders to align on the vast and varied use cases that could improve the lives of all New Yorkers, identify the necessary de-identified data to deliver on those use cases, and build the appropriate infrastructure.

With the right tools and incentives, organizations in the industries highlighted above (and others) could accelerate AI advancements for the benefit of all New Yorkers in potentially transformative ways, for example:

- Across utilities, spreading awareness of New York’s Integrated Energy Data Resource (IEDR) and encouraging greater use and integration with AI models to accelerate green energy transition<sup>41</sup>
- In workforce development, maximizing resource allocation for workforce development programs by assessing their impact through outcomes data
- In healthcare, improving patient outcomes by training AI models with vast, diverse de-identified datasets that identify patterns, predict health issues before they manifest, and eliminate bias

NYS’s convening role could be critical to unlocking barriers that stakeholders currently face. Governance will be essential to ensure use cases focus on improving the lives of New Yorkers and that sufficient data privacy safeguards are in place to maintain privacy of sensitive data. Governance could also ensure access to de-identified data and resources is provided only to individuals and organizations who operate with principles consistent with the commitment to responsible AI outlined in this report.

|                                  |   |
|----------------------------------|---|
| <b>Metrics</b>                   | <ul style="list-style-type: none"><li>– Number of collaborations convened by NYS to accelerate development of AI solutions</li><li>– Number of New York-based organizations using comprehensive de-identified datasets developed by initiative</li></ul>  |
| <b>Time horizon</b>              | 3+ years  |
| <b>Potential public partners</b> | Governor’s Office   |
| <b>Resource considerations</b>   | Governance structure, legal and regulatory review (for example, creation of standards for data privacy requirements)  |
| <b>Next steps</b>                | <ul style="list-style-type: none"><li>– Convene a first stakeholder group, such as healthcare providers, to align on opportunity.</li><li>– Confirm specific use cases and goals, and identify resourcing needs.</li><li>– Determine resourcing availability to support overall effort, such as talent and compute resources.</li></ul> |



# Advance deployment of AI in SMBs and nonprofits by creating a ‘Responsible AI Playbook’

## **Tech:NYC and Robin Hood: Advancing equity in AI adoption**

Tech:NYC and Robin Hood recently announced Decoded Futures, a partnership aiming to accelerate AI adoption across New York City’s nonprofits, with an initial focus on workforce and education organizations. The effort will convene private tech companies and 115 nonprofits across New York City to identify and explore AI-powered solutions. The initiative will give nonprofits the tools to shape the solutions they want to deploy. Decoded Futures represents a crucial step toward inclusive AI adoption in New York City. As the tech sector’s role in the city’s economy continues to grow, this partnership emphasizes the importance of ensuring that all New Yorkers, not just large private sector companies, are able to keep pace and leverage the benefits of AI.

## **Context**

Many large organizations are dedicating substantial resources to identify best practices for responsible AI deployment and integrate AI into their daily operations. In contrast, small- and medium-sized businesses (SMB) and nonprofits often face significant resource constraints that hinder their ability to consider deploying AI effectively, if at all.

In New York, businesses report using AI in producing their goods or services at a lower rate (4%) than the national average (5%).<sup>43</sup> To support AI adoption, the State could consolidate AI deployment learnings and tools from organizations further along in the adoption journey and share these resources with SMBs, enabling them to navigate the complexities of AI adoption more effectively.

## **Scope**

NYS and ETAB entities could develop a playbook for AI deployment tailored to SMBs, nonprofits, and public sector agencies in New York. By convening ETAB institutions alongside other private and nonprofit organizations, NYS could gather diverse perspectives on both general and industry-specific best practices for AI deployment. These best practices could include guidance on low-cost, high-impact use cases, considerations for procuring AI tools, as well as ethical AI frameworks or guidelines. NYS could include guidance on labor and employment best practices for implementation of AI in the workplace. The playbook could also direct SMBs to tried-and-tested AI tools and resources and highlight programs (government, private, and public) that support upskilling and expertise matching. The playbook and resources could be widely disseminated through existing no-cost platforms and channels such as NYSTAR’s Innovation Hot Spots and regional events (Recommendation 1D) to ensure broad accessibility and utilization. Each year, NYS could reconvene ETAB board members to update best practices, ensuring the guidance reflects the latest AI perspectives.



|                           |  |
|---------------------------|--|
| Metrics                   | <ul style="list-style-type: none"><li>- Median age of SMBs in New York</li><li>- Number of businesses engaged with AI Playbook through NYS Innovation Hot Spots and Incubators</li></ul>   |
| Time horizon              | <1 year  |
| Potential public partners | Economic development agencies, labor agencies  |
| Resource considerations   | Operational capacity to consolidate best practices, distribution channels or marketing resources to maximize outreach and exposure to playbook   |
| Next steps                | <ul style="list-style-type: none"><li>- Establish a working committee comprised of ETAB members and stakeholders.</li><li>- Conduct a focus group with SMBs across the state to identify the most important topics to address through the playbook's best practices.</li><li>- Collect and synthesize relevant best practice documents across ETAB institutions.</li></ul> |



# Help SMBs integrate AI tools into their operations through high-touch training and technical assistance

## Google: Offering accessible AI training

Google's [Grow with Google](#) program offers technology training and other resources to help job seekers and entrepreneurs gain the necessary skills to grow their careers or businesses. Recently, Grow with Google expanded their offerings with the launch of [AI Essentials](#), a training that, in under 10 hours, teaches users to use generative AI tools to help speed up daily tasks, make more informed decisions, and develop new ideas and content—with no previous experience required. With the understanding that integrating new tools into existing workflows can be overwhelming, Google also offers a 'higher-touch' experience, providing access to [digital coaches](#) who deliver in-person training to small businesses, including in the New York region. Google also recently announced \$10 million in funding to America's Small Business Development Center to help establish AI Clinics on university and community college campuses, where students will provide hands-on instruction and consultation to small businesses in their communities.<sup>44</sup>

## Context

Although an AI deployment playbook could provide a roadmap to SMBs and nonprofits, these organizations have also expressed a need for hands-on AI learning from experts and opportunities to build their own in-house AI expertise, so they are not solely reliant on short-term pro-bono support. Support for these SMBs and nonprofits could be expanded beyond the rich learnings from organizations further along in the AI deployment journey (Recommendation 1B), into personalized AI trainings and technical assistance programs.

## Scope

NYS could convene academic leaders, researchers, private sector leaders, and nonprofit partners to design a targeted AI training and technical assistance program for small businesses. As an example of a potential model, a network of AI professionals could engage small businesses in 1:1 discussions to align on relevant AI use cases for the small business and provide technical assistance for implementation. The network of AI professionals could also enhance AI tool literacy by suggesting easy-to-use AI tools that address common workplace challenges to the small businesses. The professionals could also provide role-based AI training for the employees within the small business. Additionally, the network could consider strategies for nonprofits and small businesses to hire and retain AI experts, including exploring apprenticeships, fractional hiring, mentorships, and other innovative solutions.

The program could target participation from any small businesses seeking to introduce AI into their operations, with special consideration given to businesses most in need of hands-on help, such as those in less populous geographic regions, with smaller overall headcount, or with limited administrative capacity. Learnings from initial rollouts could be used to revise future initiatives dedicated to providing hands-on support for AI deployment to small businesses.

|                           |  |
|---------------------------|--|
| Metrics                   | Number of organizations leveraging AI training and technical assistance program  |
| Time horizon              | 1–3 years  |
| Potential public partners | Economic development agencies, public academic institutions, labor agencies  |
| Resource considerations   | Network of AI professionals to participate in this effort  |
| Next steps                | <ul style="list-style-type: none"><li>– Conduct a focus group with small businesses across the state to understand their main barriers to leveraging AI.</li><li>– Identify and suggest a cadre of AI experts to help address identified barriers, building on existing coaching and mentoring programs.</li><li>– Launch the call for small businesses.</li></ul> |



# Grow and attract AI and AI-adjacent startups by promoting existing pool of extensive New York State resources

## Armory Square Ventures: Investing in secondary cities and markets

Upstate New York boasts a burgeoning startup and investment ecosystem. Since the pandemic, the region has seen a rise in total startup investments, though much of this growth has been concentrated in more mature companies undergoing later-stage funding rounds. Early-stage startups, however, still find it difficult to secure the necessary funding and resources to develop their ideas.

Armory Square Ventures (ASV), a seed and early-stage venture fund, invests in early-stage software companies and actively focuses on secondary markets such as Upstate New York. The firm has created significant opportunities for founders and residents of these geographies, catalyzing close to 2,500 jobs. Over the past several years, ASV has regularly hosted community events to foster connectivity among regional founders and strengthen the regional ecosystem.<sup>45</sup>

## Context

New York is a hub for tech talent, ranking second nationally in the number of science and engineering degrees conferred<sup>46</sup> and third in net tech employment.<sup>47</sup> However, since 2018, New York's share of AI job postings has declined by 1.7 percentage points,<sup>48</sup> a trend driven by the increasing geographic dispersion of technology hubs. In 2023, New York trailed behind California, Texas, Virginia, and Florida in tech job postings.<sup>49</sup> This presents an opportunity to grow or attract more AI businesses and businesses essential to the advancement of AI, thereby increasing the number of tech jobs in New York.

## Scope

NYS could ensure business ecosystems nurture, grow, and attract AI businesses and those critical to the advancement of AI. NYS could leverage learnings from ETAB members to refine its business attraction materials. The materials could highlight the unique characteristics that make New York a thriving ecosystem for AI enterprises, such as the presence of leading research institutions, top-tier talent, sustainable infrastructure, and extensive and well-established professional networks. NYS could invite ETAB companies and their partners to share testimonials about the advantages of working in New York and their vision for a robust AI ecosystem in the state.

To foster innovation and provide better support for AI startups and aspiring AI entrepreneurs already located in the state, NYS could enhance awareness of available resources, including the AI Playbook (Recommendation 1B) and investment opportunities such as NY Ventures. The Advisory Board recommends NYS host regional events, potentially through NYSTAR's Innovation Hot Spots, to spotlight these resources, boost engagement, and build connectivity. NYS could invite ETAB companies to these events to share tailored insights and valuable perspectives on the advantages of operating in New York. The events could include structured forums for participants to share their learnings with peers, creating a network of organizations that can share tailored best practices.

|                           |  |
|---------------------------|--|
| Metrics                   | <ul style="list-style-type: none"><li>– Number of technology jobs in New York</li><li>– Number of AI and AI-adjacent businesses leveraging existing economic development resources</li></ul>   |
| Time horizon              | <1 year  |
| Potential public partners | Economic development agencies  |
| Resource considerations   | Operational capacity to update materials and host regional events  |
| Next steps                | <ul style="list-style-type: none"><li>– Develop 12–18-month roadmap to engage regional AI and AI-adjacent businesses and spotlight economic development resources.</li><li>– Refine existing business attraction materials.</li><li>– Host first regional event.</li></ul> |



# Democratize AI skill building by providing K–12 AI education resources to New York public schools

## Girls Who Code: Equipping students with AI literacy tools

Girls Who Code (GWC) knows that the future of AI depends on who is developing it. That’s why they’re equipping young people with AI literacy and tools, and empowering them to bring their vital perspectives into the tech landscape. All of GWC’s programs are tailored to meet the unique needs of K–12 students, and are developed in close collaboration with students, educators, and technical leaders. With the support of dedicated corporate partners, students learn about emerging technology in real-world settings and are introduced to diverse leaders in the field. GWC’s AI activities, accessible to over 70,000 elementary, middle, and high school students, focus on skills such as data analysis, AI awareness, and evaluating and refining machine learning models. Additionally, more than 8,000 high school students have been introduced to advanced AI software development tools through GWC summer programs where they build skills in emerging technology such as AI, cybersecurity, and data science.<sup>50</sup>

## Robin Hood: Teaching the AI teachers

In 2019, CUNY launched the Computing Integrated Teacher Education program with the goal of incorporating computing education, including emerging technologies, into all its teacher educator programs. The program is now implemented across all 16 CUNY colleges of education, with more than 6,500 new educators already trained, and could be a model for other educator preparation programs across the state to help ensure that all new teachers graduate prepared to both build AI literacy among their students and integrate AI into their instruction.

## Context

Efforts are underway by New York State to bring computer science into classrooms through initiatives such as the Computer Science and Digital Fluency Learning Standards, which went into full effect in September 2024.<sup>51</sup> At the same time, there is great demand from teachers for AI training: 88% of computer science teachers said they would benefit from training about how to use and teach AI.<sup>52</sup> By supporting K–12 schools, NYS could equip the workforce of tomorrow for potential large-scale shifts in jobs caused by AI and empower young people to benefit from AI more equitably.

## Scope

New York State could support AI education in K–12 schools by sharing guidance about bringing AI into classrooms and by providing AI resources to schools. This two-pronged effort could make important strides toward growing younger New Yorkers’ AI literacy. According to TeachAI, an organization that helps education leaders and policy makers develop responsible policies around AI in education, AI literacy is “the collection of skills that a person needs to understand, use, and critically evaluate artificial intelligence. AI literacy ensures that students know how to use AI through applications as well as the fundamentals of how it works through computer science.”<sup>53</sup>

NYS could partner with leaders in the education space (e.g. District Superintendents, NYC Public Schools AI Policy Lab, educators, and their unions) to establish and share guidance on how schools select effective AI tools, as well as teach and use AI responsibly and in a way that is proven to advance learning.<sup>54</sup> Guidance from the state could include best practices such as incorporating AI across subject areas in schools, building students’ critical thinking skills when using AI, and educating parents about how AI can be used in the classroom and at home to advance students’ learning.

NYS could also share curricula and teacher training to support schools to bring AI education into the classroom. NYS could leverage public curricula such as those from Girls Who Code, AI4ALL, and Code.org and provide teacher training to help educators use them. Such training could include methods to identify and address misuse of AI in the classroom. Curricula could include courses on ethical use of AI—such as Code.org’s “AI Code of Ethics” course—and provide guidance on how curricula could be used across various subject areas to support schools in integrating the lessons into the structure of their school days, and how curricula align to New York’s Computer Science and Digital Fluency Learning Standards.<sup>55</sup> Nonprofits such as Girls Who Code could work with districts and after-school providers to launch free after-school clubs that teach foundational AI concepts and provide project-based learning. ETAB organizations could support these efforts by funding and running a state-wide AI hackathon for schools to partake in.<sup>56</sup> NYS could encourage schools to grow their AI programs by providing AI literacy “badges” when they pass certain benchmarks, such as a percentage of teachers trained.

|                                  |   |
|----------------------------------|---|
| <b>Metrics</b>                   | <ul style="list-style-type: none"><li>– Percent of public school students who have received AI education at school</li><li>– Percent of schools with at least 1 teacher trained in teaching AI</li></ul>                            |
| <b>Time horizon</b>              | 1–3 years   |
| <b>Potential public partners</b> | Education agencies  |
| <b>Resource considerations</b>   | Curricula, trainings for educators, working group to meet with thought leaders  |
| <b>Next steps</b>                | <ul style="list-style-type: none"><li>– Create working committee to begin building guidance.</li><li>– Curate recommended curricula to share with schools.</li><li>– Identify professional development training strategy.</li></ul> |



# Empower all New Yorkers to safely and confidently use AI through a multi-faceted public awareness campaign

## NYS: Deploying AI within state agencies

The Department of Labor’s Virtual Career Center uses the power of AI technology to connect employers to job seekers. By analyzing job seekers’ unique skills, experiences, and interests against a database of over 1.5 billion resumes, the AI-powered Virtual Career Center shows job seekers opportunities they may have never considered, but for which they could be a great match.

Job seekers can use the AI Career Center simply by uploading their resume and exploring the job recommendations tailored to their qualifications and skills, along with recommendations of training programs to gain skills for roles the job seeker may want to apply for in the future. Businesses can use the AI-powered database to explore candidate profiles and qualifications before inviting matches to apply.<sup>57</sup>

## Context

Although AI presents significant opportunity, it can only live up to its transformative potential if the public understands its benefits, how these tools work, and how they can best be used. This understanding needs to be built across communities.

One survey found that almost 50% of New Yorkers fear AI—they also expressed concerns about a lack of transparency when AI is deployed by the media, and about how to keep AI models from being used by bad actors.<sup>58</sup> There are also disparities in who benefits from AI, as well as levels of AI literacy. In the US, 45% of those under 30 know how large language models work, compared with only 15% of those 65 and older.<sup>59</sup> Along gender lines, while 54% of men use AI in their personal and professional lives, only 35% of women do.<sup>60</sup> Individuals who interact with computers in their daily work are most likely to benefit from AI, leading experts to recommend that policymakers invest in AI literacy for a broader population of workers.<sup>61</sup>

This recommendation aims to support all New Yorkers, and especially those who might not otherwise achieve AI literacy through an institution such as their workplace, K–12 schooling, or higher education.

## Scope

A public awareness campaign could demystify AI for New Yorkers, sharing how it can improve their lives, and increasing their confidence in how to safely use AI. The campaign could speak to a diverse set of audiences by showing various use cases, such as a high school student using a chatbot to research colleges and scholarships, an artist using AI to help create a website to sell her products, or a middle-aged resident using NYS DOL’s chatbot to navigate unemployment insurance.

The campaign could also connect residents to resources to learn more about AI, including a virtual toolkit<sup>62</sup> and in-person learning “activations” in public spaces frequented by New Yorkers. The virtual toolkit could include a variety of AI tools and courses, tipsheets about key topics such as writing prompts when using a chatbot or understanding “deep fakes.” The toolkit could also provide insight into how NYS uses AI to support residents, such as DOL’s use of AI to connect employers to job seekers.

In-person activations could include longer workshops about using AI and shorter walk-throughs of the virtual toolkit. Activations could occur in a variety of public places from libraries to farmers markets, from civic centers to New York State welcome centers. The campaign could be delivered to urban, suburban, and rural areas across the state. Strategically placed advertisements in public transportation and along highways, as well as through TV and radio ads, could be used to deliver campaign messaging throughout the state.<sup>63</sup>



|                                  |  |
|----------------------------------|--|
| <b>Metrics</b>                   | <ul style="list-style-type: none"><li>- Percent of New Yorkers who feel confident about using AI in their everyday life</li><li>- Percent of New Yorkers who know at least one way to use AI to make their life easier</li></ul>   |
| <b>Time horizon</b>              | <1 year  |
| <b>Potential public partners</b> | Labor agencies, public affairs agencies  |
| <b>Resource considerations</b>   | Infrastructure channels to display campaign, PR firms to help design the campaign, content from nonprofits such as Girls Who Code  |
| <b>Next steps</b>                | <ul style="list-style-type: none"><li>- Establish working committee and develop work plan for first ~100 days.</li><li>- Design pilot considering initial set of audiences, outreach channels, and content.</li><li>- Launch pilot, gather feedback to evaluate impact, and revise for next phase.</li></ul> |



# Create paid internship and apprenticeship opportunities in AI and AI-adjacent jobs for under-represented college students

## Pfizer: Supporting young talent

Pfizer offers early talent programs with rich experiences, including in digital and AI, which are being applied across every aspect of their business. Starting with high school, Pfizer is a proud sponsor of Girls Who Code, which exposes students to AI and tech roles. For college students, Summer Growth Experience paid internships allow participants to gain impactful, hands-on AI and tech experience. And for college graduates, the Digital Rotational Associate Program allows them to spend two years completing four rotations in digital and technology roles such as AI and analytics, software engineering, cybersecurity, cloud, robotic process automation, and customer experience, to name a few. Upon successfully completing the program, rotational graduates move into permanent roles in the Pfizer Digital division, many of which are based in New York. For the other 90,000 colleagues, Pfizer offers learning programs at all stages of their journey including the Pfizer Learning Academy, which provides robust desired and required learning, and the AI Academy, which helps colleagues build AI skills and knowledge to drive innovation and enhance their day-to-day productivity.

## Context

Occupational shifts due to AI may have disproportionate impacts: women are 1.3x more likely to be affected than men, and Hispanic workers are 1.2x more likely to be affected than white workers.<sup>64</sup> Representation challenges also persist in AI careers: under 14% of AI researchers globally are women, and women make up only 20% of computer science degree holders in the US.<sup>65, 66</sup>

## Scope

There is an opportunity for New York State to proactively grow the pipeline for residents of underrepresented communities to attain AI and AI-adjacent jobs across sectors. ETAB companies and other New York organizations could establish a partnership with SUNY, CUNY, and the Department of Labor to create ~20,000<sup>67</sup> paid internship and apprenticeship opportunities in AI and AI-adjacent jobs by 2030. With funding support from NYS, SUNY and CUNY could build a specialized program to place students into AI internships and apprenticeships (including “pre-apprenticeships” geared toward college-age students) within ETAB companies and other organizations.<sup>68</sup> These could include academic and research opportunities and, when possible, build on existing programs. Organizations offering AI apprenticeships could work with DOL to secure funding as a Registered Apprenticeship program.<sup>69</sup> Funding for this effort could also allocate stipends to program participants to offer wraparound support to assist with needs such as childcare or transportation.

This program could be coupled with training about AI and computer science skills needed in the workplace, as well as job search and networking training and mentorship. Students in the program could apply to internships ranging in duration from weeks to months, full- and part-time, as best suited for their circumstances.

An example of a similar program is Break Through Tech, which has worked with CUNY to place women in short-term tech internships called “Sprinternships” and runs a virtual 10-month AI Program that equips participants with skills needed to land a job in data science, AI, and machine learning. More than half of “Sprinternship” participants landed employment during the summer after<sup>70</sup> and 80% of students who participated in the AI Program landed an internship or full-time position in tech.<sup>71</sup>

|                           |  |
|---------------------------|--|
| Metrics                   | Percent of participants who attained a full-time job in AI/tech at the company they interned/apprenticed at or another company in the industry   |
| Time horizon              | 1–3 years  |
| Potential public partners | Labor agencies, SUNY, CUNY   |
| Resource considerations   | Development of AI and networking training curricula for program, instructional, and mentorship staff at SUNY and CUNY to support participants and partner companies  |
| Next steps                | <ul style="list-style-type: none"><li>– Convene SUNY and CUNY steering committee and ETAB organization partners.</li><li>– Develop training curriculum and select program partners.</li><li>– Roll out program with initial pilot and gather data on success of program in first 6 months.</li></ul> |



# ETAB companies pledge to support the New York AI ecosystem through upskilling efforts

## IBM: Democratizing AI skills

IBM understands the importance of providing technology training and artificial intelligence skills for today's workforce. That's why IBM made a commitment to skill 30 million people by 2030, and as of December 31, 2023, over 11.5 million learners globally have engaged with free IBM training content. To achieve this goal, IBM is developing new academic and industry partnerships and new in-demand content—from AI fundamentals and AI Ethics to advanced coursework in generative AI. IBM's upskilling work extends to supporting youth as well. Through IBM SkillsBuild, IBM partnered with USTA Foundation to offer free access to career readiness resources and AI training, benefitting around 25,000 under-resourced youth from 250 of the foundation's chapters across the US, including in New York.

## M&T Bank: Instituting a Tech Academy

M&T Bank launched the Tech Academy in 2021 with the mission of cultivating a more inclusive tech workforce through training and development. Located at the bank's Tech Hub in Buffalo, the Academy upskills and reskills in key areas such as data, cybersecurity, and cloud technology. Over the last four years, the Academy has provided continuous learning for M&T technologists while also building non-traditional, community-based talent pipelines into local employers. As one example, M&T Bank has worked with IBM to run the bank's "Z Development Program" (ZDP), a collaborative between M&T Bank, IBM, Franklin Apprenticeships and the Urban Institute to connect community members with in-demand technology careers. Apprentices join in entry-level technologist roles who support core-banking functions that run on the IBM Z® platform.<sup>72</sup>

## Context

Evolving AI and automation technologies may create occupational shifts in the New York region by 2030.<sup>73</sup> Around one in three job shifts are directly attributable to the impact of generative AI.<sup>74</sup> Gen AI can create growth in productivity, support residents to attain higher-value roles, and unleash workers' creativity.<sup>75</sup>

## Scope

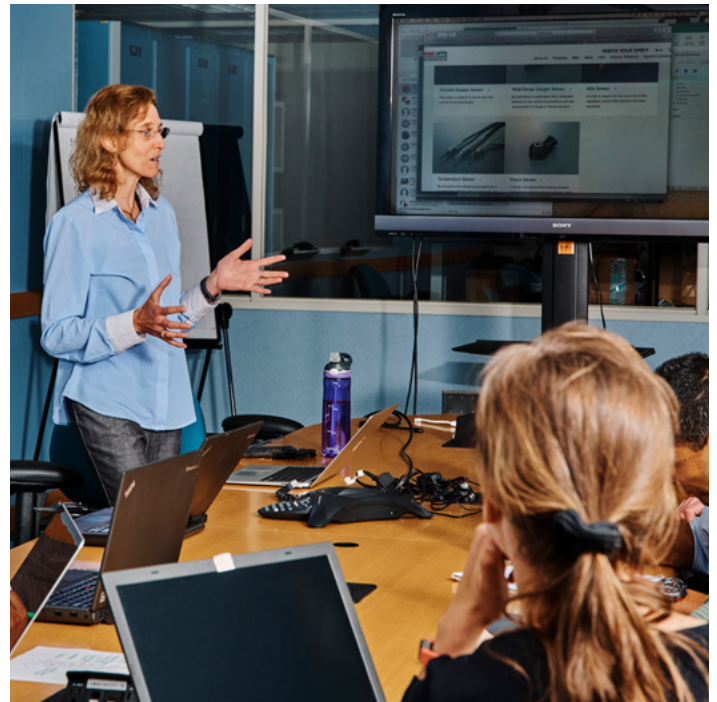
ETAB companies can pledge to lead AI upskilling efforts within their own companies and support efforts of other organizations in the state. The goal of this pledge is for ETAB companies to empower workforces, at scale, to deploy AI in their daily work and prepare for how AI may change their work in the future—with the added benefit of increasing AI literacy in the active working population in New York.

Upskilling efforts within companies could look different at each organization depending on the company's needs, structure, and roles, and will be at the discretion of each company. For example, some organizations may deploy single-day AI "Hackathons," other companies may provide a virtual course where employees learn how to use AI chatbots to generate prompts to support in their daily tasks, while others may focus on broadening employee understanding of ethics and bias considerations when using AI. Upskilling efforts could be varied to meet employee needs, providing different training for distinct groups based on their roles.

Companies could also pledge to support other organizations, including SMBs and nonprofits, to equip employees with AI skills. Mentorship for these SMBs could be in the form of sharing resources or hosting training programs at ETAB companies.

Similar upskilling efforts have taken place at large banks, healthcare companies, and tech companies. For example, M&T Bank's Tech Academy has upskilled thousands of workers through their Tech Academy to help employees advance in their technology roles.<sup>76</sup> IBM has also committed to upskilling 30 million people globally by 2030.<sup>77</sup>

|                           |   |
|---------------------------|---|
| Metrics                   | <ul style="list-style-type: none"><li>– Percent of employees upskilled per company</li><li>– Number of companies mentored by each ETAB company</li></ul>  |
| Time horizon              | <1 year   |
| Potential public partners | Labor agencies  |
| Resource considerations   | Training facilitators, training curricula, physical spaces for trainings, allocating time for employees to participate  |
| Next steps                | <ul style="list-style-type: none"><li>– Confirm and announce targets for upskilling by ETAB companies (e.g. number of employees to upskill, targeted timelines).</li><li>– Convene steering committee of ETAB and upskilling partners.</li><li>– Work with Department of Labor to understand which businesses are most in need of AI upskilling and match those companies with ETAB partners.</li></ul> |



# Strengthen pipelines to new jobs for displaced workers by supporting reskilling efforts

## **NPower: Creating pathways to career growth and economic empowerment**

NPower, a national nonprofit based in New York, offers free tech training, support services, and job placement assistance to veterans, military-connected individuals, young adults, and women from underserved communities. Through partnerships with leading employers, NPower creates pathways to success by blending top-tier training in IT basics, cloud computing, and cybersecurity with trauma-informed personal support and professional development. Their programs equip participants with both digital and essential skills to thrive in the tech industry.

By leveraging data and industry collaborations, NPower fosters career growth and economic empowerment for its participants. To date, the organization has trained over 12,000 graduates and aims to expand its reach to 15,000 annually by 2030, all while maintaining strong job placement rates. With 81% of graduates securing jobs or further training, and an average salary increase of 300%, NPower's impact is clear. Their dedication to inclusivity and addressing the specific needs of those they serve is a cornerstone of their mission to build a more diverse and capable tech workforce.

## **Context**

Research shows there may be occupational shifts by 2030 due to automation and AI. Of those transitions, ~75% are expected to occur in the categories of office support, customer service and sales, food services, and production work.<sup>78</sup> Although some roles will remain even as the activities and responsibilities within them change, some portion of workers may face displacement, and the exact impact of displacement is unknown. Given its leadership as an employer across so many industries, New York has the opportunity to provide support in these transitions by strengthening pathways to in-demand jobs for workers.

## **Scope**

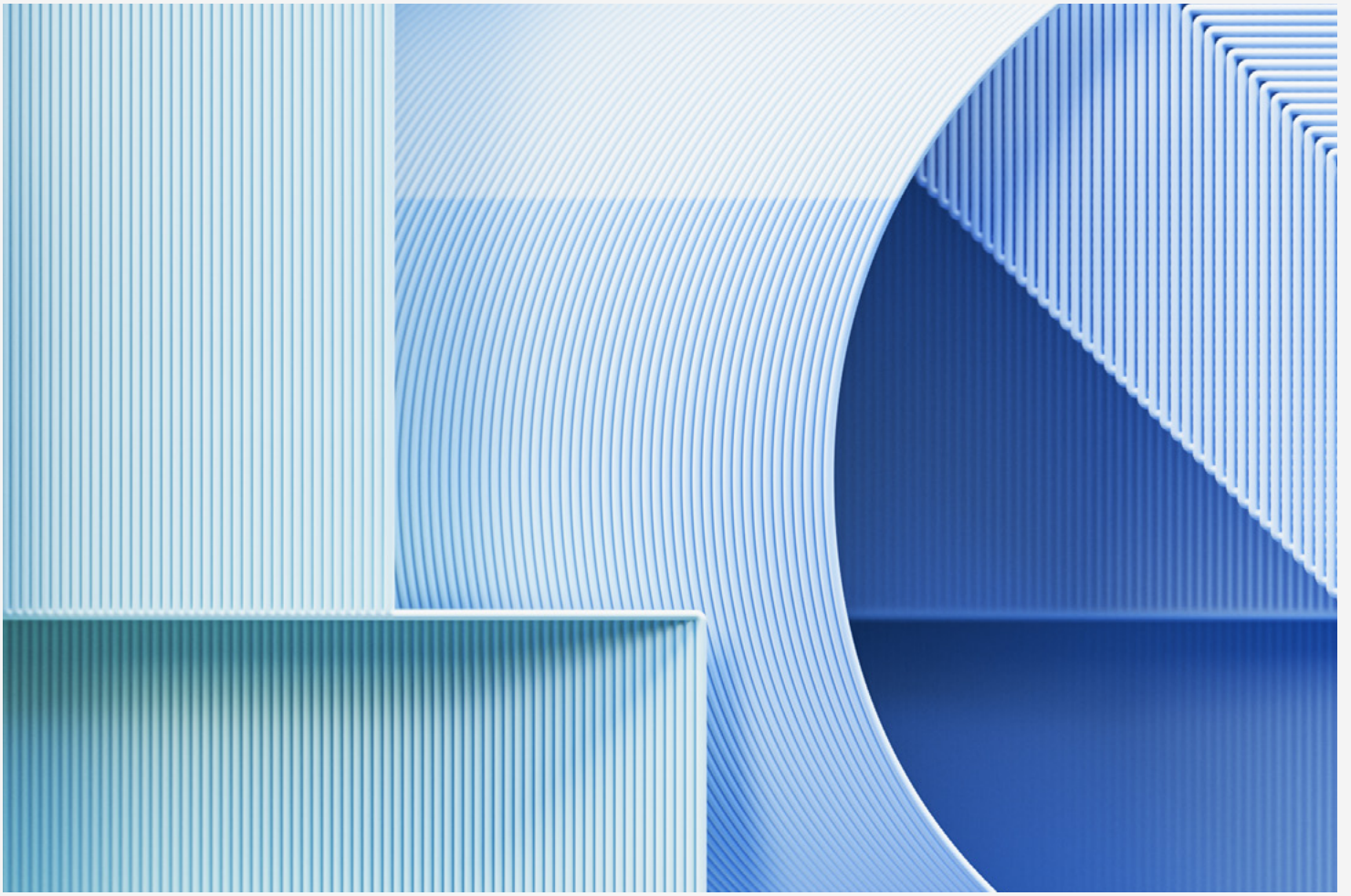
For those who may be displaced, NYS could create a pipeline to new jobs with wraparound support to help residents enter new industries. NYS could create an annual fund<sup>79, 80</sup> that provides resources for job placement and reskilling organizations (e.g. the Workforce Development Institute, the Consortium for Worker Education, NPower, YearUp, Per Scholas), as well as SUNY and CUNY and other technical programs aimed at helping residents enter in-demand fields such as software engineering and clean energy. Funding for participating organizations could be competitively sourced using performance-based metrics, such as percent of participants placed in jobs or retaining jobs for a certain timeframe.

NYS could leverage DOL's programs and services to highlight this program. Program development could focus on supporting residents in jobs where AI is most likely to create shifts. This fund could be renewed yearly and potentially increased in size dependent on impact assessments and growth of nonprofit partners' capacity. This program could offer stipends allocated to provide wraparound support such as childcare or transportation, which help participants fully engage in the reskilling programs.

This proposed recommendation also aligns with aspects of the "Just Transition" chapter of the NYS Scoping Plan within the NYS Climate Act, which emphasizes the importance of "connecting workers to employment opportunities through career services, skills training, and infrastructure investments."<sup>81</sup> An agile approach to this effort is recommended as the full impact of AI on jobs remains uncertain and will likely evolve over time.

|                                  |  |
|----------------------------------|--|
| <b>Metrics</b>                   | <ul style="list-style-type: none"><li>– Percent of participants connected to jobs within 6 months of program completion</li><li>– Percent of individuals who retained their job for 1+ years</li></ul>   |
| <b>Time horizon</b>              | 1–3 years  |
| <b>Potential public partners</b> | Labor agencies   |
| <b>Resource considerations</b>   | Funding for upskilling organizations and public higher education institutions and technical programs, stipends for wraparound support for participants, infrastructure to market the opportunity to apply to the programs  |
| <b>Next steps</b>                | <ul style="list-style-type: none"><li>– Create grant structure and application protocol through which skilling organizations could apply to join program.</li><li>– Identify marketing channels for advertising the program to residents.</li><li>– Roll out program with pilot and gather data on success of program within first 6 months.</li></ul> |





Next steps



## From recommendations to reality

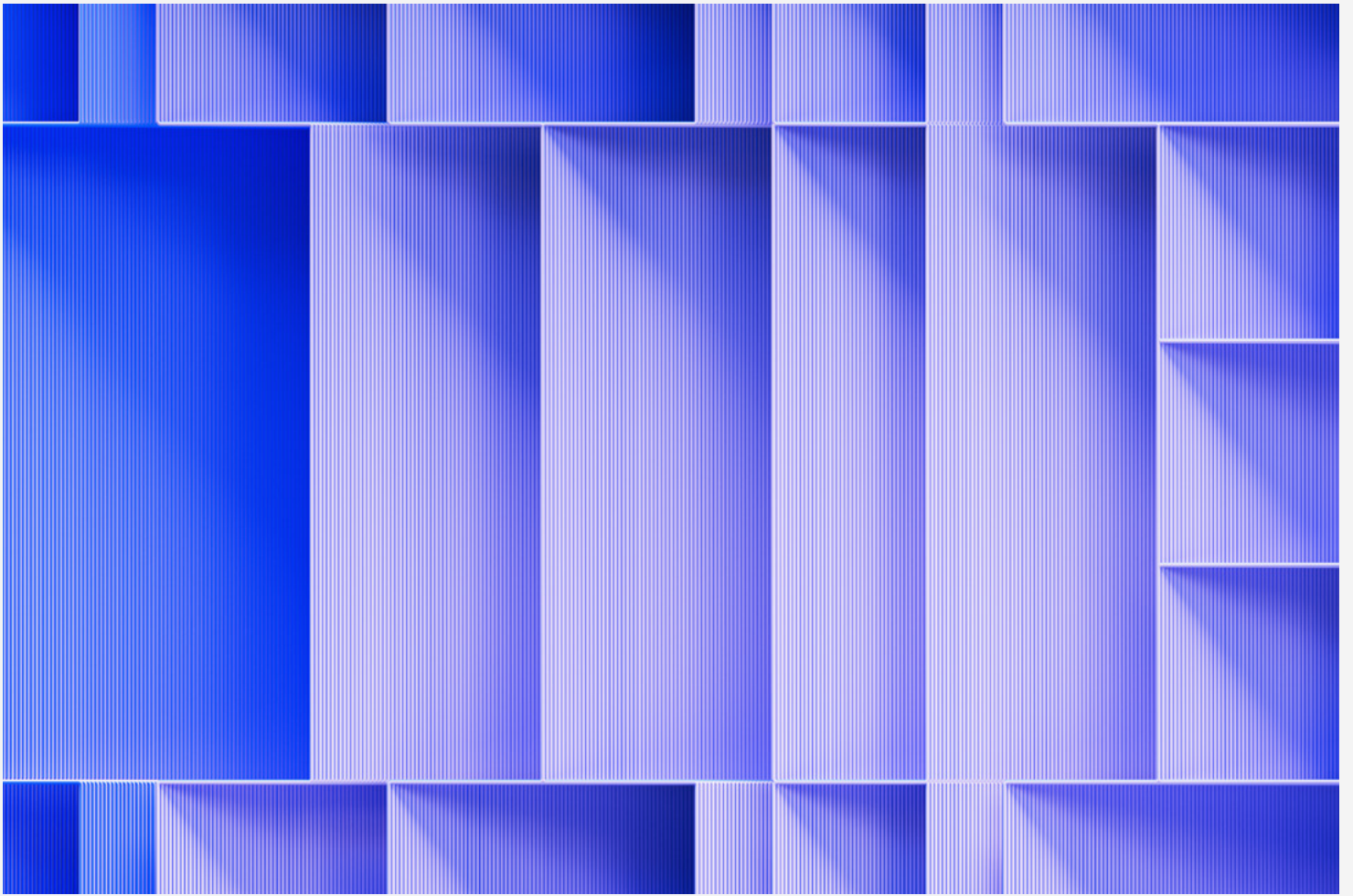
The Advisory Board is excited by the potential impact of the recommendations and is eager to move forward with its outlined commitments in partnership with the State. Should the State choose to proceed, the board encourages the State to reference the next steps outlined in each of the recommendations.

Successfully implementing the outlined recommendations will require a strong partnership between the Advisory Board and New York State, with appropriate and clear accountability and organizational structures. The Advisory Board recommends the Office of the Governor sponsor the efforts and facilitate coordination with relevant State and municipal agencies. Each recommendation could have a leading government agency guiding implementation. In cases where a member institution within the Advisory Board leads implementation (e.g. Recommendation 3B), the attached government agency could be a key stakeholder and thought partner. Agencies essential to implementation include Empire State Development Corporation and the Department of Labor, among others.

The Advisory Board expects the complete vision will take multiple years to implement and will require extraordinary collective will, commitment, and collaboration among the State's leadership, Advisory Board institutions, other private sector, nonprofit organizations, philanthropic organizations, thought leaders, and advocates. Some recommendations, such as the Public Awareness Campaign, could reach their first minimum viable pilot within one year. However, some will take longer to reach their first milestone, due to the need for additional planning and securing resources. Because of these realities, the Advisory Board urges the State to proceed with the urgency of now.

It's important to note that the recommendations in this report were developed with input from over 40 stakeholder interviews. As the recommendations are implemented, stakeholder engagement could continue. The Advisory Board and the State could continue outreach to ensure implementation is aligned to the State's needs and best practices, and future implementation will develop in response to their inputs.





# Acknowledgements

# Thank you

We extend our deepest gratitude to the cross-sector leaders, including the Advisory Board delegates, the working team, stakeholders, and New York State agencies, who dedicated the subject-matter expertise, leadership, time, and thought partnership that were foundational to the development of this report. We are also thankful to McKinsey & Company who provided partnership and support to the Girls Who Code and IBM working team.

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- Sule Baptiste, Healthfirst
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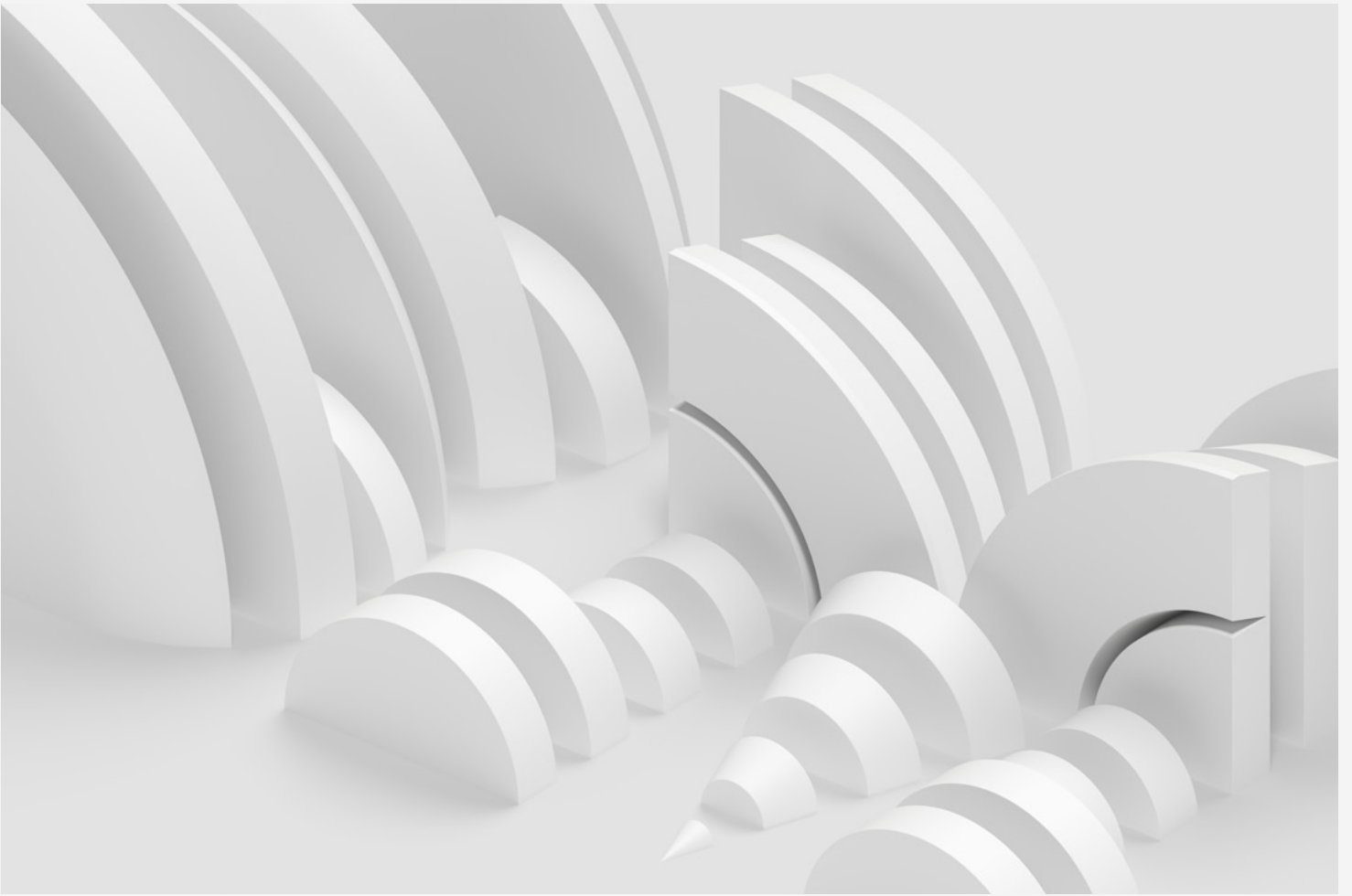
- Xiao Linda Liu, McKinsey & Company
- Anthony Shorris, McKinsey & Company
- Gabriel Morgan Asaftei, McKinsey & Company
- Maurice Obeid, McKinsey & Company
- Tejas Shah, McKinsey & Company

## External stakeholders

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- Judith Splitz, Break Through Tech
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- Andrew Rasiej, Civic Hall
- Taylor Jo Isenberg, Economic Security Project
- Josh Mendelsohn, Empire AI
- Krystyn Van Vliet, Empire AI
- Beverly Hart, Etsy
- Josh Silverman, Etsy
- Jeffrey Zubricki, Etsy
- Katie Antypas, National Science Foundation
- Daria Siegel, New York City Economic Development Corporation
- Kiersten Barnet, New York Jobs CEO Council
- Jason Naidich, Northwell
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- Marc Triola, NYU Langone
- Maria Gotch, Partnership Fund for NYC
- Stacey Matlen, Partnership for NYC
- Kathryn Wylde, Partnership for NYC
- Kevin O’Neil, Rockefeller Foundation
- Victoria Espinel, Software.org: the BSA Foundation
- Shadi Shahedipour-Sandvik, SUNY AI Task Force
- Martin Creel, TeachAI
- Pat Yongpradit, TeachAI

## New York State agencies

- Empire State Development Corporation
- New York Executive Chamber
- New York State Council on the Arts
- New York State Department of Labor
- New York State Education Department
- New York State Energy Research and Development Authority



# Endnotes

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