

NYC / EDC

New York City's AI Advantage

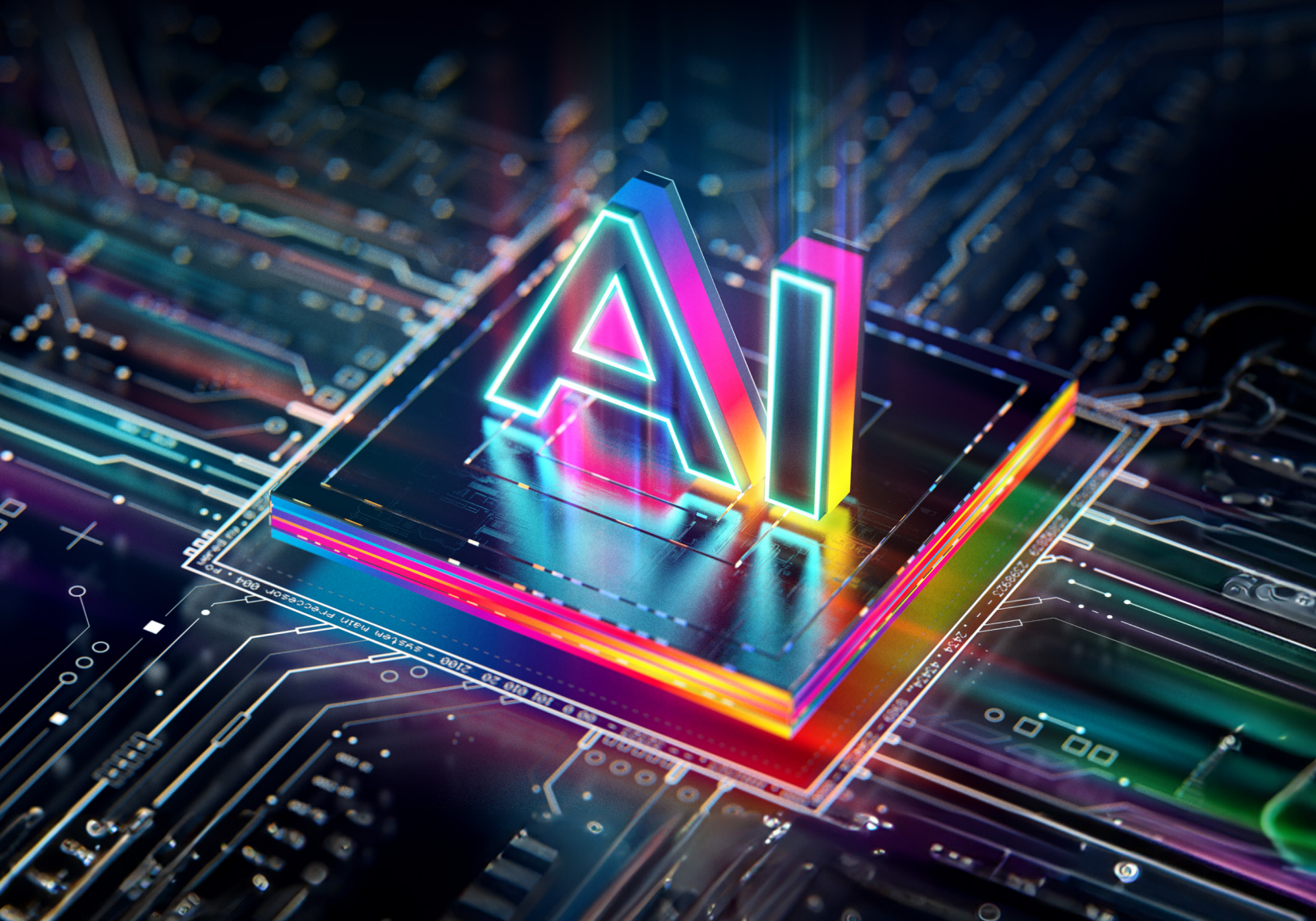


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Fellow New Yorkers,

New York City is the Applied AI capital of the world. Our economy is vast and diverse, with fast-growing life sciences, green economy, and tech industries intersecting our world-leading finance and cultural sectors. And there are big AI opportunities in every one of these industries. New York City AI startups are already developing tools to help lawyers grind through terabytes of documents, clothing retailers to minimize fabric waste, and banks to issue micro-loans to small businesses. They're

optimizing power distribution across green grids, and developing tech that might detect rare cancers earlier or synthesize life-saving drugs faster. AI companies here are augmenting existing jobs as they create entirely new ones.

We've got a strong tech foundation. Google, Meta, IBM, Microsoft, Apple, and Amazon have opened a combined 6 million square feet of space in New York City in recent years. OpenAI, maker of ChatGPT, just opened an office in the iconic Puck Building in Manhattan. Over 40,000 AI-ready workers, 1,200 active investors, and over 2,000 AI-startups – including 35 AI unicorns – already call New York City home. We've got the talent. Since 2021, 500,000 recent graduates have flocked to New York City and an equal number are enrolled in our academic institutions. We've produced STEM PhDs three times faster than the rest of the country. And the Mayor and Governor are doubling down on the AI transformation.

NYCEDC is working with Tech:NYC to launch a new branding campaign to spotlight our tech ecosystem and to stand up an "AI Advisory Council" to guide its equitable growth. We're launching an "AI Nexus" program to supercharge AI adoption. And city agencies are piloting AI education at our public schools, universities, and libraries, to equip every New Yorker with the tools to thrive in an AI-driven economy. All of this, building on the Mayor's ambitious 2023 "Artificial Intelligence Action Plan," which laid a foundation for responsible and innovative use of AI across city government, and the Governor's 2024 "Empire AI" launch, which provided \$400 million in funding to secure New York's place at the forefront of supercomputing infrastructure and innovation.

This is New York City's AI advantage, and I'm proud of my team's work in producing this comprehensive report. If you're an AI founder, researcher, or investor ready to take on the world, then New York City is ready for you.

Sincerely,

Andrew Kimball
President & CEO, NYCEDC

Artificial intelligence (AI) is rapidly advancing a new era of economic growth and technological transformation on a scale equivalent to the rise of personal computers, the internet, and the information age. As emerging AI applications auto-generate new content, research and analysis, and additional software code, virtually every economic sector is investing in the promise of AI to massively increase productivity.

AI is both a technology tool and a technology subsector in and of itself. Since ChatGPT was first released to the public two years ago, explosive demand and investment activity in this emerging technology has driven research, application and service development, infrastructure growth, and talent resourcing to rapid scale. This AI boom has already produced over 2,000 AI startups based in New York City and in 2023 alone, approximately one-third of venture capital raised by NYC startups was directed to AI.

The growth of this technology sector in NYC is largely a reflection of its unprecedented market impact and scale. McKinsey estimates that AI could contribute \$13.6 trillion to \$22.1 trillion annually to the global economy.¹ The United States is at the forefront of global AI adoption and as such the economic impact

is expected to be significant. With a \$1.3 trillion GDP economy, and more Fortune 500 companies than any other city, NYC is already a living laboratory for the application of AI.

Because of the scale and diversity of the NYC economy and the depth of the AI industry based here, NYC is rapidly emerging as the global leader in Applied AI—the creation and adoption of AI solutions for real-world problems specific to each of NYC's many industries.

New York City Economic Development Corporation's (NYCEDC) role is to ensure New York City is equipped to lead and that our workforce and entrepreneurs can access the opportunities AI brings for a prosperous future. Since its creation in 1991, NYCEDC has focused on building a more vibrant, resilient local economy by diversifying its industry sectors, broadening NYC's strength in financial services by growing emerging sectors like technology, life sciences and the green economy. Recognizing AI as a critical force in shaping the future, NYCEDC is committed to securing NYC's leadership in AI to build an even stronger local economy while ensuring all New Yorkers can participate.

In compiling this report and set of recommendations,



NYCEDC engaged over 100 global stakeholders including large corporations, startup founders, venture capitalists, nonprofits, and public agencies to identify NYC's economic development opportunities as they relate to AI.

Chapter 1 describes New York City's strategic position as a world-leading AI ecosystem. With a robust talent pool and leading academic institutions, abundant access to capital, and a thriving startup ecosystem, New York City is uniquely positioned to lead the AI boom. There are more than 360,000 people employed in technology in New York City and the city is home to over 25,000 tech startups. Today there are over 40,000 workers in the New York metro area with AI skills. New York City is home to over 1,200 active venture capital firms with Andreessen Horowitz, Index Ventures, Lightspeed, and Sequoia Capital all recently expanding here. New York City's world-renowned universities, including New York University, Columbia University, Cornell Tech, and the City University of New York (CUNY), graduated over 87,000 AI-ready degree holders from 2018 to 2023. And AI research hubs are sprouting across NYC at Google, Meta, IBM, and Microsoft, the Flatiron Institute, Memorial Sloan Kettering Cancer Center, and Mount Sinai.

Chapter 2 addresses the anticipated shift to the workforce that AI will bring. As the adoption of AI reshapes industries, it is expected to redefine existing occupations and organization structures, and to create demand for new skillsets. With successive generations of improved AI technology and widespread availability of AI services, industries will increasingly use AI to create new content, research, and data analysis. Finance, real estate, legal, professional services, healthcare, life sciences, media, and creative companies are rapidly leveraging AI to optimize operations, enhance decision-making, and elevate customer experiences. To harness these tools effectively, entirely new occupations will be created, spanning everything from specialized technical engineering positions including prompt engineering roles to critical roles in governance, ethics, and compliance, including AI ethics and compliance officers.

While some occupations are expected to be displaced by AI, far more jobs are expected to be enhanced through AI assistance, allowing workers to complete tasks more efficiently and with increased productivity. According to an Accenture survey of 500 NYC C-level executives, 97 percent firmly believe that AI will yield a net positive impact on society.ⁱⁱ While opinions vary widely on both economic and workforce impacts, the numbers are all large. The World Economic Forum projects net job growth, including new job categories resulting from AI adoption,ⁱⁱⁱ and McKinsey projects the New York City region will add 200,000 net jobs by 2030 on factors including adoption of AI and other technological shifts.^{iv}

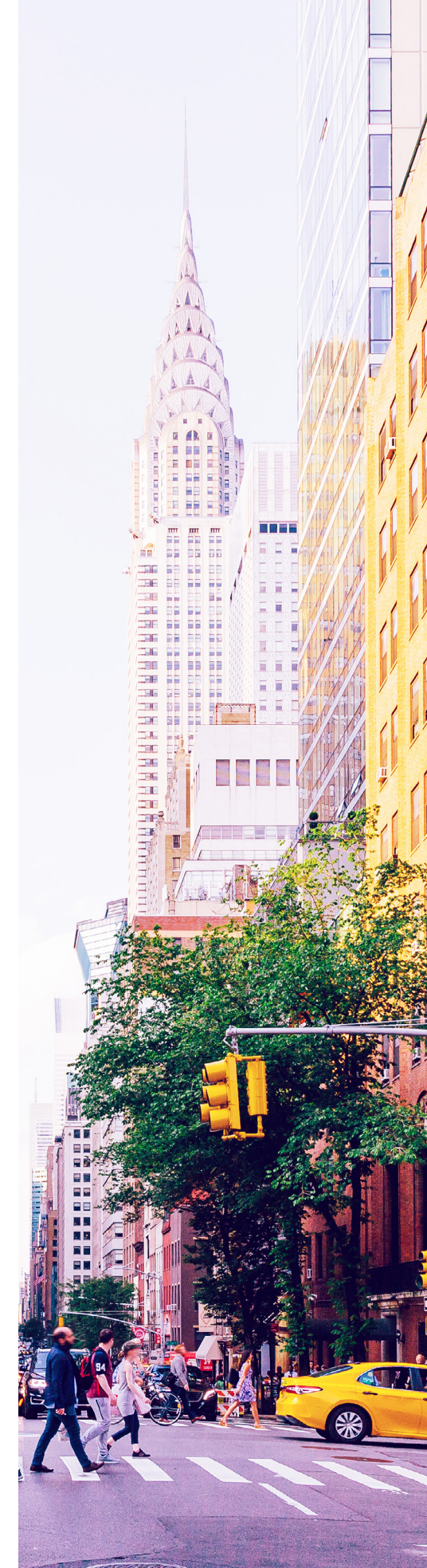
Goldman Sachs anticipates that global productivity will be boosted by an estimated seven percent annually over a 10-year period.^v

Chapter 3 outlines historic investments that NYCEDC, the City of New York, and the State of New York have made to advance the technology sector, many of which now support the emergence of AI. These include programs like the Data Science Institute at Columbia University, Cornell Tech on Roosevelt Island, the NYC Media Lab, and the Center for Responsible AI, both at NYU; and key infrastructure investments like Empire AI, NY Creates, and the Green CHIPS programs.

Chapter 4 delves into the challenges, concerns, and importance of responsible AI while emphasizing the need for clear regulations, safeguards, and sustainable practices to foster innovation while mitigating risks and ensuring equitable societal benefits. Critical issues highlighted include ethics, accountability, privacy, bias, discrimination, and energy consumption associated with AI development and deployment.

Chapter 5 outlines a detailed set of programs and objectives for NYCEDC and the City to support NYC's small- and medium-sized businesses, entrepreneurs, and workforce in this critical moment of transition. These programs are set out in full detail in Chapter 5 but are summarized on page 11.

With the strategic priorities outlined in *New York City's AI Advantage*, NYCEDC will work to cultivate an innovative and collaborative AI ecosystem, attract investment, prepare NYC's workforce for the jobs of tomorrow, and advance NYC's standing as the premier global hub for Applied AI.



Artificial Intelligence Definitions | ■

Artificial Intelligence (AI)

A machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. Artificial intelligence systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action.^{vi}

Generative AI (GenAI)

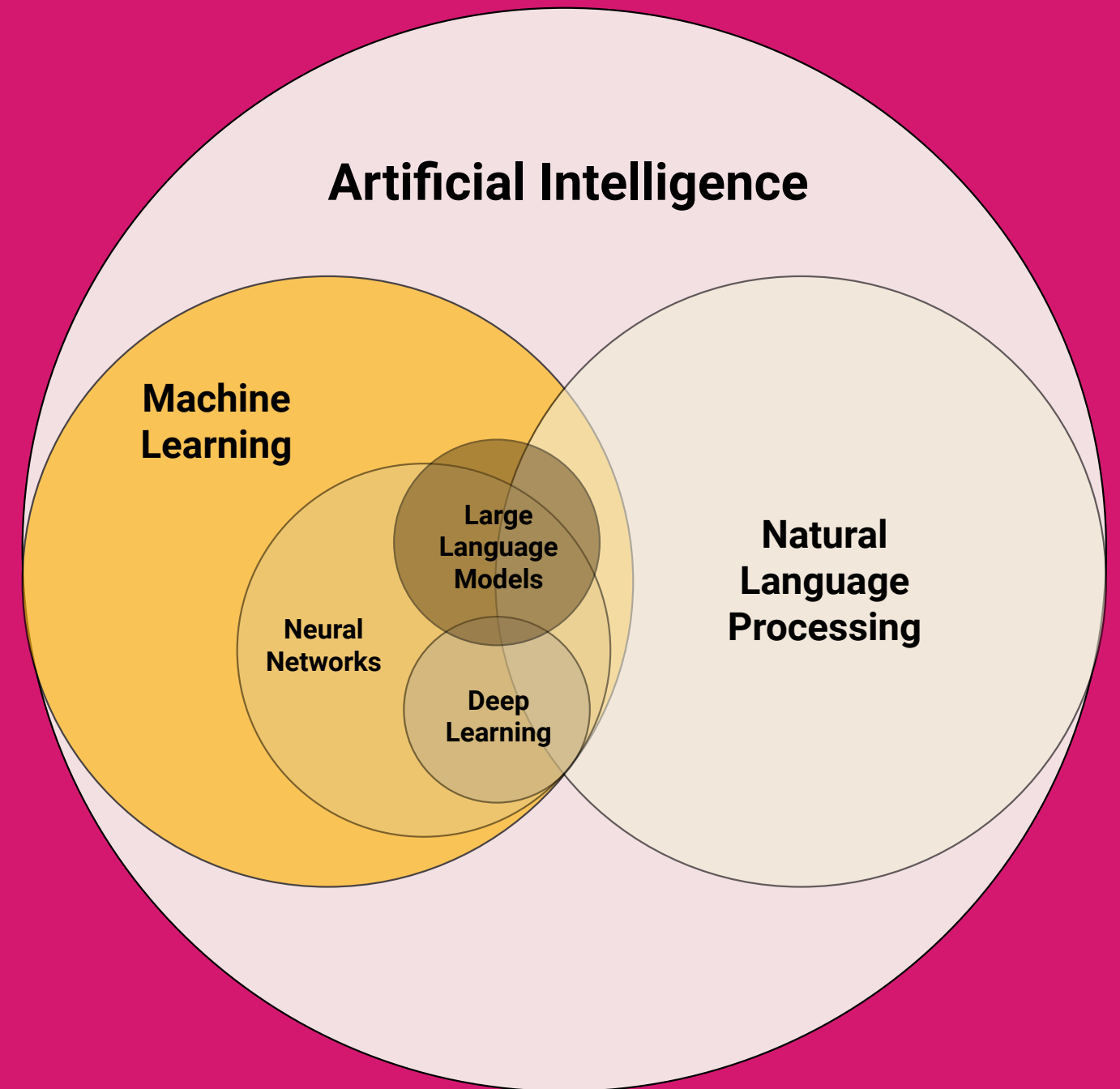
Any AI system whose primary function is to generate content, which can take the form of code, text, images, and more.^{vii}

Machine Learning (ML)

The study of computer algorithms that improve automatically through data, a subcategory of artificial intelligence. These algorithms differ from rules-based programming as they build a model based on training data to complete a task with minimal human intervention.^{vii}

Applied AI

The creation and adoption of artificial intelligence (AI) solutions to address real-world problems and improve business outcomes. Some real-world examples of Applied AI include: customer support chatbots, weather prediction for disaster preparedness, legal research and contract analysis to identify risks and compliance, and market-trend analysis to identify consumer purchasing behaviors.



Source: Goldman Sachs

AI Priorities for NYCEDC and the City

Based on research and industry feedback, NYCEDC's three AI priorities are:

- Advance New York City's position as the global leader in Applied AI
- Foster new business creation and partnerships to build a dynamic and prosperous AI ecosystem
- Develop a diverse AI-ready workforce to power the future of the economy

NYCEDC will partner with Tech:NYC to launch a campaign that establishes NYC as the global hub for Applied AI by highlighting its robust tech ecosystem, innovative startups, and groundbreaking AI applications. Through high-profile events, conferences, strategic partnerships, and speaking engagements, the campaign will showcase NYC's leadership in AI, attracting top talent, businesses, and investments. By amplifying local success stories and fostering global connections, the initiative will drive economic growth, stimulate job creation, and position NYC as the premier destination for AI innovation and collaboration, cementing its reputation as the Applied AI capital of the world.

Marquee 2025 Initiative: Create and launch an AI Advisory Council

In partnership with Tech:NYC, NYCEDC will create an AI Advisory Council focused on private sector growth, innovation, and applications of AI. These ambassadors for NYC's AI community will advise the City on initiatives to ensure AI in NYC supports the growth of our economy across all sectors and businesses both large and small.

Goal 1: Advance New York City's position as the global hub of Applied AI

Foster AI innovation in a vibrant entrepreneurial ecosystem and emphasize AI as a cornerstone of NYC's economic landscape that fuels sustainable economic growth.

Marquee 2025 Initiative: Promote NYC as a leading hub for AI innovation to attract company formation, talent, and investment, creating jobs that support the city's economy

Artificial Intelligence Commitments for Economic Impact

Goal 1: Advance NYC's position as global Applied AI leader

1. Promote NYC as a leading hub for AI innovation
2. Create and launch an AI Advisory Council
3. Advance AI adoption across health and life sciences
4. Globally market incentives and programs to attract and retain a vibrant AI ecosystem
5. Leverage challenge-based procurement for AI adoption by City agencies

Goal 2: Foster new business formation and partnerships to build a dynamic ecosystem

6. Develop programs to support the adoption of AI across NYC industries
7. Support underrepresented tech founders leveraging AI with resources they need to grow
8. Attract AI events to NYC and forge strategic partnerships
9. Deploy the \$40 million NYC Catalyst Fund to include AI
10. Position the \$50 million Greenlight Innovation Fund to support AI infrastructure needs
11. Support early-stage climate tech companies leveraging new technologies through piloting programs like Pilots at BAT
12. Embrace AI opportunities through NYCEDC programmatic initiatives

Goal 3: Develop a diverse, AI-ready workforce to power the future of the economy

13. Connect CUNY students with internship opportunities at AI startups
14. Pilot AI literacy programs across NYC's public libraries
15. Scale programs supporting foundational awareness of GenAI
16. Leverage Civic Hall for new AI literacy programs
17. Support women looking to transition into tech and AI with mentorship and digital office hours with industry experts
18. Launch an AI Policy Lab to support AI learning across NYC Public Schools



Founder Fellowship gathering at NYCEDC

Goal 2:
Build a dynamic and prosperous tech ecosystem that supports small-and-medium-sized businesses and entrepreneurs

New York City thrives on small business entrepreneurship. One in eight businesses in New York City was formed in the last year—about 23,400 companies. By building early connections between small- and medium-scale businesses and AI innovators, we can cultivate and proliferate AI applications for less well-resourced segments of NYC’s economy.

Marquee 2025 Initiative:
Develop programs to support the adoption of AI technological transformations across NYC industries

NYCEDC will release a request for proposals (RFP) to establish the “NYC AI Nexus.” The AI Nexus will facilitate collaborations between NYC-based startups and founders with NYC’s businesses to identify, build, and ultimately adopt Applied AI solutions to ensure the continued competitiveness of NYC’s key industries.

Marquee 2025 Initiative:
Support underrepresented NYC tech founders leveraging AI with resources they need to grow

Continue to fund cohorts of the Founder Fellowship, with a focus on AI startups and their unique needs and provide these diverse NYC-based tech-enabled founders with access to resources and networks to help them grow their companies.

Marquee 2025 Initiative:
Attract AI events to NYC and forge strategic partnerships with event organizers

Elevate NYC’s visibility as the premier hub for Applied AI, attract top talent and investments, and solidify the city’s reputation as a leader in shaping the future of AI by attracting leading AI conferences to New York City. Additionally, by forging strategic partnerships with homegrown event organizers and conferences, we will showcase NYC’s greatest AI strengths and talents.

Goal 3:
Develop a diverse AI-ready workforce to power the future of the economy

Prioritize workforce partnerships that offer diverse New Yorkers the necessary tools and knowledge to thrive in an AI-driven economy.

Marquee 2025 Initiative:
Connect CUNY students with internship opportunities at AI-first startups

Expand the NYC Startup Internship Program with a targeted focus on connecting CUNY students to dynamic roles at AI-first startups with placements commencing in summer 2025. This program will provide approximately 750 CUNY students over four years with hands-on experience and strengthen the talent pipeline for NYC’s burgeoning AI sector. The program will provide curriculum for student participants to improve AI literacy with a goal of 25 percent of placements into AI/ML-enabled startups.

Marquee 2025 Initiative:
Pilot AI literacy programs across NYC public libraries

Partner with New York, Brooklyn, and Queens Public Libraries to pilot new AI literacy programs. NYC libraries are the trusted resource for digital literacy. Through this program, librarians will gain a deep understanding of AI technologies, equipping them to teach and empower youth and other library patrons to confidently explore and engage with these cutting-edge tools.



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New York City's Strategic Position in AI | ■



NYC AI Startup and Venture Ecosystem

With over 2,000 NYC-based AI startups and over 1,200 active venture capital firms, many investing in AI companies, NYC is already a leader in AI startup creation and venture investments.^{ix} Of the approximately 300 global AI unicorns—venture-backed startups valued at one billion dollars or more—35 are in the NYC metro region. Fifteen of these unicorns received financing in 2024.

NYC AI companies received \$21.4 billion in VC funding from 2018-2022, up 5x from \$3.8 billion in the previous five-year period. NYC AI firms between 2018-2024 raised the most capital in their Seed and Series C rounds, which speaks to strengths in NYC's funding ecosystem for both early-stage startups (Seed rounds) and access to capital for companies ready to scale (Series C). AlleyCorp made their largest pre-seed check ever into NYC-based Radical AI who is working to change the way materials are designed,

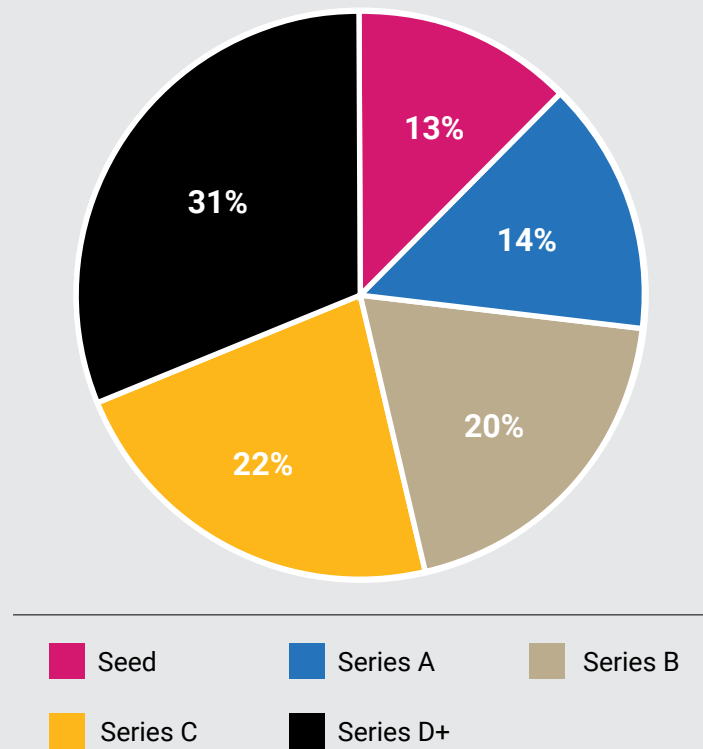
developed, and discovered through AI and applied research.

Of the venture capital dollars invested in NYC, some of the largest investments were to AI startups including Runway, a leading AI video-generation platform, which raised \$141 million Series C; Pinecone, a vector database startup, which raised \$100 million Series B; and Hugging Face, a pioneering platform for the sharing, collaboration, and management of machine learning models, datasets, and applications which raised \$235 million Series D.

Additional top VC deals for NYC AI/ML companies in 2024 include Cyera (\$300 million), AlphaSense (\$650 million), Altana Technologies (\$221 million), Cognition (\$185 million), Ramp (\$150 million), and EvolutionaryScale (\$142 million).

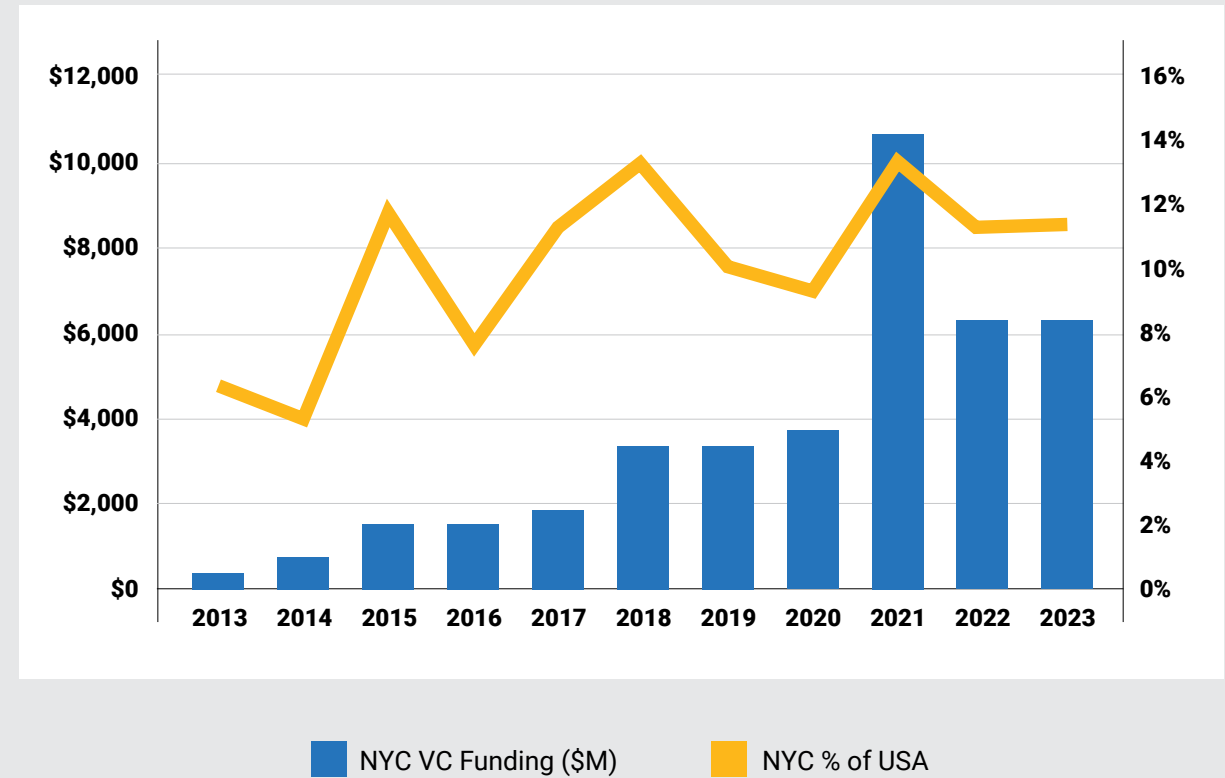


NYC-Metro Area AI Investments by Stage 2018-2024 (\$M)



While 2021 was the record high of AI funding to-date (\$10.17 billion), **AI investment in NYC firms has been taking an increasing share of total capital raised in NYC**, from 20.9 percent in 2021 to 22.9 percent in 2022 to 35 percent in 2023. While second in the nation behind the Bay Area for venture capital AI investments, **NYC AI companies accounted for 11.3 percent of nationwide AI VC funding from 2018-2022**. That's up from 7.7 percent in the previous five-year period while the Bay Area's share of nationwide AI VC funding decreased from 59.3 percent to 46.6 percent between 2018-2022. According to research conducted by Accenture in partnership with Tech:NYC, since 2019, 1,035 AI-related NYC companies have collectively raised \$27 billion in funding, tied with Beijing and ahead of Shanghai (\$15 billion), London (\$11 billion), Tel Aviv (\$7 billion), and Singapore (\$4 billion), other global AI hubs.^x

NYC AI VC Funding and Share of Nationwide AI VC Funding, 2013-2023



NYC-Metro AI Unicorn Industry Sector Segmentation

Information Technology	\$9.8B
Business Products and Services	\$4.3B
Healthcare	\$1B
Financial Services	\$1.7B
Consumer Products and Services	\$1.3B

According to PitchBook, of the 10 most-active VC investors in GenAI since 2019, six have a presence in NYC including Sequoia, Andreessen Horowitz, Alumni Ventures, Lightspeed, Gaingels, and Tiger Global. Collectively these firms have over \$180 billion in assets under management.^{xi}

NYC's Broader Technology Ecosystem & Opportunity for Applied AI | ■

The NYC tech sector has grown significantly over the last fifteen years and today is the second-largest tech startup ecosystem in the world.^{xii} With over 360,000 jobs within the NYC tech ecosystem, the tech sector represents seven percent of the city's total workforce. From 2017 to 2022, tech employment, meaning tech occupations in both tech industries and non-tech industries, grew 39.4 percent from 151,200 to 210,800, and average annual wages grew 23.8 percent from \$165,000 to \$204,000.^{xiii}

New York City's strengths include the largest capital markets, the most diverse and educated talent pool, and a robust ecosystem of tech startups and industries seeking to innovate. With over 25,000 tech-enabled startups who call NYC home,^{xiv} NYC headquartered companies have raised over \$200 billion venture capital dollars since 2011, roughly equal to London, Hong Kong, and Singapore combined.^{xv} In 2023 the NYC tech ecosystem was valued at \$647 billion in valuations plus exits.^{xvi}

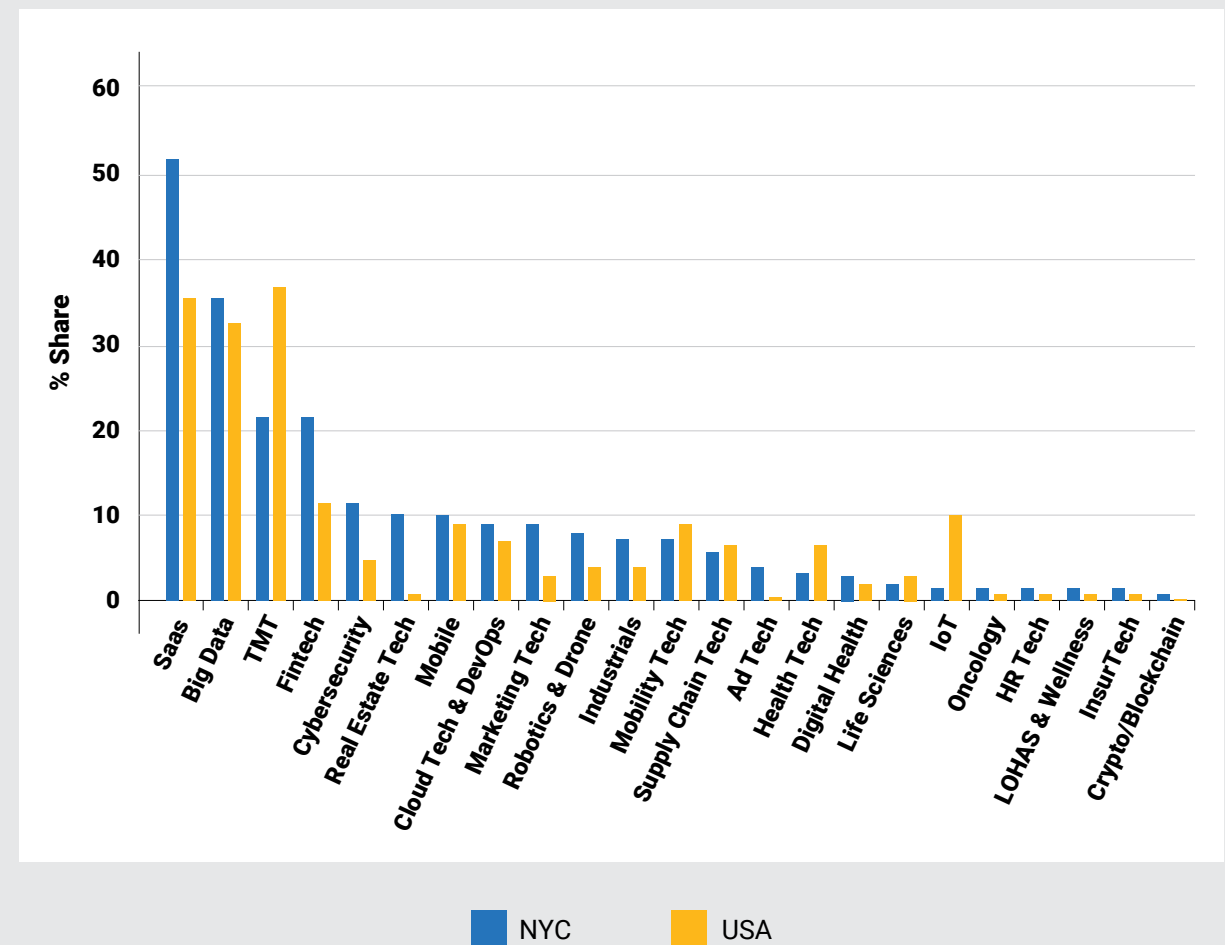
New York City's technology and startup sector benefits from the breadth of subsectors and verticals of New York's legacy industries, including finance, insurance, and real estate sectors (FIRE). Unsurprisingly, NYC venture capital investments in AI are following

similar trends—NYC is receiving larger shares in VC investment in verticals including software-as-a-service (SaaS), fintech, cybersecurity, and real estate tech. The chart on page 19 showcases AI venture capital investments comparing NYC to the United States between 2021 and today. Traditional sectors that have long been embedded in NYC's economy are outperforming the rest of the US in AI investments.

As AI catalyzes innovations across all industries, NYC will lead in Applied AI—the application of AI to solve problems in various domains. Applied AI enables organizations to address specific problems by leveraging AI tools and techniques directly within their operations, creating industry-specific solutions that enhance products, services, and customer experiences.

Accenture research underscores this opportunity. Accenture found that 99 percent of NYC C-level executives surveyed were already planning to increase their AI investments, indicating that AI will be a central driver in transforming how New York's largest businesses operate.^{xvii} This confluence of industry presence and innovation positions NYC to be at the forefront of AI adoption and economic growth.

AI VC Funding by Vertical, 2021-present (% Share)



Case Study: Chan Zuckerberg Biohub New York (CZI)

The Chan Zuckerberg Biohub New York (CZI) is a cutting-edge nonprofit research institute focused on leveraging artificial intelligence to transform health and life sciences. With \$20 million in funding from NYCEDC and Empire State Development, CZI New York launched in October 2024 at the Studebaker Building on Columbia University's Manhattanville Campus.

CZI unites top scientists from Columbia University, Rockefeller University, and Yale University to harness the immune system for health monitoring and disease eradication. By combining advanced experimental technologies, systems biology, and AI, CZI is driving faster, more precise biomedical discoveries and establishing New York City as a leader in AI-driven health innovation.

Tech-Enabled Startups

AI adoption across industries is fueling the growth of new tech startups who will work to address the demands for specialized AI solutions and open up new markets. Sectors that haven't traditionally leveraged significant innovation, from energy and logistics to construction and more, are now ripe fields for AI-driven evolution, and it is expected that many new early-stage startups will be leveraging cutting-edge technology like AI to address new markets. In fact, many of these startups will utilize AI tools themselves as they build their products and go-to-market strategies, with research showing that younger firms are more likely to adopt AI.^{xviii} By incorporating AI from the outset, a new wave of startups are being created, supercharged as they leverage AI tools to write code and build their minimum viable products (an early, basic version of a product), conduct market research and source

business development leads. While it is still early to measure the economic impact of AI use in startup formation, this speed to market may ultimately help firms generate revenue and reach profitability at a faster rate than those without AI.

Small- and Medium-Sized Businesses

AI is not just a benefit to large firms; small- and medium-sized enterprises (SMEs) also stand to benefit from AI adoption. With approximately 180,000 SMEs, NYC has one of the highest concentrations of SMEs in the US.^{xix} These SMEs are often in competitive industries, where the adoption of AI tools can provide a significant edge, driving growth. For companies with smaller teams, utilizing productivity tools like AI will have dramatic impacts to enhance capacity and save money, from automating mundane tasks, improving customer acquisition and tasks, and ultimately creating operational efficiencies. Given that 95 percent of firms in NYC have fewer than 50 employees and these firms account for 25 percent of total NYC employment, AI adoption at scale could lead to significant economic growth.

Nonprofits and Tech in the Public Interest

With over 46,000 nonprofits in New York City employing over 600,000 people in 2020 and contributing \$77 billion to the NYC economy (9.4 percent of NYC GDP), there is much potential that AI will unlock for the nonprofit sector and the communities they serve.^{xx} These nonprofits will need support to ensure timely adoption of AI, bridging potential financial constraints to technical knowledge gaps. According to a 2023 Robin Hood survey, 85 percent of nonprofits surveyed were interested in learning about AI, but fewer than 15 percent had engaged in any AI-related learning or activity, and only 10 percent had any in-house capacity.^{xxi} Leading NYC organizations and philanthropists are already standing up new programs and initiatives to support the development of applications of AI for social impact. Not unlike private industry, the nonprofit sector has much to benefit from the applications of AI to improve capacity, support fundraising, and streamline

operations to increase impact. Recent NYC-based programs include:

- Tech:NYC and Robin Hood Foundation's [Decoded Futures](#) connects NYC-based tech companies with social service nonprofits to strengthen their organizational capacity by leveraging AI to improve the delivery of social services that millions of New Yorkers depend upon to survive. The inaugural cohort of 22 NYC-based nonprofits focused on education and workforce development nonprofits.
- Robin Hood's [AI Poverty Challenge](#) aims to identify breakthrough solutions that deliver results and inspire more efforts to use the powerful capabilities of AI in service of expanding upward mobility from poverty. Three \$1 million awards will be granted to AI solutions to fight poverty in categories of workforce, education, and financial empowerment. [Find AI Poverty Challenge finalists here.](#)
- [AlleyCorp's Nonprofit ENG\(INE\)](#) is an effort to build tech for nonprofits to scale their impact and awards four nonprofits with \$1 million of in-kind engineering support to democratize access to cutting-edge technology and 10x impact.
- The AI for Nonprofits Sprint is housed within the Fund for the City of New York and aims to bring 5,000 nonprofit staff from 100 nonprofits to baseline AI literacy by 2025. Their mission is to show how AI will measurably add capacity and fight staff burnout in a sector under capacity.
- [Good AI Academy](#) offers hands-on bootcamps for nonprofit and public interest professionals. This three-week program, now in its initial cohort, is currently housed at Civic Hall and is organized around three components: AI Foundations for Impact, AI in Action, and an AI lab.

Public Sector Progress

The robust opportunity for AI adoption in the public sector to drive productivity and improved delivery of services is beyond the scope of this report. However, in these areas, New York City agencies are paving the way to use AI to better serve New Yorkers. Key to this success is the Office of Technology and Innovation (OTI), which published New York City's [Artificial Intelligence Action Plan](#) in October 2023 to bolster the City's efforts to effectively and responsibly deploy these transformative technologies. OTI reports a rapidly expanded use of algorithmic tools across New York City, growing from 16 to 46 tools used across 16 City agencies over the last four years of reporting, addressing use cases such as public health, child welfare, education, emergency response, and environmental protection.^{lx}





“ As the tech sector increasingly powers more of the city’s economy, it is incumbent upon us to ensure that it’s not just the private sector who benefits, but also all New Yorkers, through Decoded Futures, we will ensure that the private sector and human service organizations work together to ensure inclusive and user-friendly adoption of AI technology. ”

— **Julie Samuels**
President and CEO of Tech:NYC

Innovation Industries

To identify which NYC-based industries have the greatest potential for economic growth through the application of AI tools, innovations, and discoveries, NYCEDC researchers established a new methodology analyzing a range of data sets. This methodology overlays GDP and job-growth data with an analysis of occupations within each industry that are expected to have high exposure to AI and factors in the strength of venture capital investments in those same sectors.

Through this lens, NYCEDC ranked industries where there may be the greatest opportunity for economic growth as AI drives innovation in these industries and finds new use cases. The table on page 24 forecasts the top NYC-based industries primed for growth through AI application.

A Diverse Market for AI Adoption

In healthcare and life sciences, AI is driving breakthrough discoveries at a faster pace and with greater accuracy. According to Pfizer, AI and machine learning (ML) helped in delivering PAXLOVID—the Covid-19 oral treatment—to patients faster than ever before.¹⁶¹ AI and ML are collapsing the time from research to market and helping get new medicines to those in need. Today, AI and ML are used in more than half of all Pfizer clinical trials with high-speed analysis of data. Moreover, Pfizer used AI to optimize the manufacturing of PAXLOVID and to identify disparities in access to treatment.



NYC Industry Sectors Ranked by AI Opportunity

Sector Description	% of NYC GDP (2022)	% of NYC Jobs (2022)	NYC GDP Growth, 2012-2022	NYC Job Growth, 2012-2022	% of Occupations with High Exposure to AI	NYC Venture Capital Investment of AI x Industry Compared to Nationwide
Tech	9%	5%	171%	74%	41%	More
Finance and insurance	24%	8%	70%	8%	37%	More
Health care and social assistance	6%	19%	73%	41%	13%	Less
Advertising, PR, and related	2%	2%	82%	16%	52%	More
Real estate and rental and leasing	17%	3%	48%	10%	37%	More
Publishing industries (except internet)	2%	2%	57%	57%	33%	Less
Administrative and support and waste management and remediation services	2%	5%	76%	21%	11%	Less
Life sciences	1%	<1%	108%	55%	31%	Less

Source: NYCEDC ERP

The sectors that rose to the top as most primed for economic growth through AI, including finance and insurance and advertising and PR, have already been early adopters of AI in NYC. In terms of financial services, McKinsey research states the banking industry stands to create an additional \$200 billion to \$340 billion annually from the use of generative AI.^{xxii}

Integrating AI into healthcare is poised to revolutionize clinical and administrative functions by driving efficiency, reducing costs, and optimizing workforce productivity. According to McKinsey, adopting current generative AI tools could allow payers to reduce administrative costs by 13 to 25 percent, reduce medical costs by 5 to 11 percent, and increase revenue by 3 to 12 percent.^{xxiii} These gains stem from enhanced operational workflows, faster decision-making, and personalized care delivery. Furthermore, Deloitte notes that AI applications in healthcare, such as predictive analytics and automated diagnostics, have the potential to save billions annually while improving patient outcomes.^{xxiv}

A recent report by Silicon Valley Bank showcases the shift in digital health investment from the Bay Area to NYC, with NYC firms surpassing venture capital raised with \$2.3 billion in the first eight months of 2024, compared to \$2.1 billion in the San Francisco area. This increase and growth are largely attributed to AI. Forty-four percent of digital health investments in the US across the first eight months of 2024 went to AI firms, an eight-percent increase over the full year of 2023.^{xxv}

NYC has been a leader in venture investment into these sectors as they have adopted emerging technologies to become more innovative and resilient. Additionally, many of these sectors employ some of the largest shares of tech employees in NYC.

Several of the sectors identified are priority industries for NYCEDC, where NYC holds competitive advantages. NYCEDC is actively investing in these industries through capital and programmatic investments to further position NYC as a leader and to ensure that these sectors are at the forefront of innovation. These sectors include:

- **Healthcare and Life Sciences:** The City of New York is investing \$1 billion as part of LifeSci NYC, a commitment to create jobs and establish New York City as the global leader in life sciences. This expanded initiative is expected to generate 40,000 jobs and has a large focus on the intersection of AI, robotics, and emerging technologies in the life sciences industries.
- **Green Economy (which includes proptech, a subset of the real estate sector listed above):** NYCEDC forecasts that the green economy will employ 400,000 New Yorkers by 2040.^{xxvi} Together with partners at the Trust for Governors Island and Brooklyn Navy Yard, collectively, the Harbor Climate Collaborative, NYC will be the center of a burgeoning climate innovation ecosystem. AI will be an important tool in the fight against climate change and these partners are working collaboratively to help de-risk new technologies and accelerate commercialization of climate technologies to decarbonize the built environment. As an example, NYCEDC supported the installation of Conservation Lab's technology at the Brooklyn Army Terminal which utilized AI to create smart water monitoring and detect leaks. It is anticipated that AI will become increasingly efficient at solving environmental problems, from construction of new buildings to enhancing accuracy in weather forecasting to reducing disaster risks.

New York City AI Firm Real Estate Leasing | ■

AI growth has translated to commercial leasing as many AI firms prefer in-person connection and collaboration. According to Cushman & Wakefield data, NYC ranks as the third-most active real estate market for AI startups with 1.7 million SF of tenants

in the market as of January 2024.^{xxvii} AI startups are choosing to build in NYC because of the strong and diverse talent pool and because talent wants to live in NYC due to the high quality of life and exciting and dynamic arts and culture scene.

NYC AI Leasing Highlights

- **Captions**, an AI video firm, leased 15,000 SF in Union Square in February 2024.
- **Cohere**, a Canadian headquartered enterprise-level LLM firm, opened their office in the Meatpacking District in March 2024, housing 30 employees to start.
- **CoreWeave**, a firm building nextgen cloud infrastructure, leased over 17,000 SF in the Financial District in March 2024.
- **OpenAI**, shortly after announcing a search for 60,000 SF of real estate in NYC, signed a lease for 90,000 SF of real estate in the Puck Building in Soho. They opened their NYC

- office in October 2024 and are actively hiring in NYC, making it the second largest office for the organization in the nation with 450 employees.
- **Harvey**, an AI legal-tech unicorn, having leased 17,050 SF at 315 Park Avenue South in the Flatiron District in the summer of 2024, added an additional floor, doubling their NYC office footprint in just four months. As the highest-valued startup in OpenAI's portfolio, Harvey is tapping into the opportunities in big law and accounting in NYC to create automations and therefore efficiencies to routine tasks like analyzing documents, consolidating research and tracking productivity.

AI Startups in New York City



“The depth and diversity of talent and experiences that NYC offers is unparalleled. You’re only ever a few subway stops away from industry-defining companies and the people behind them. The short feedback loop that NYC offers AI companies looking to move the world forward is invaluable for rapid iteration.”

— **Anthony Matos**
CEO & Co-Founder, Shubox

AlphaSense AI for Market Research

AlphaSense is an NYC-based market intelligence platform that exists so that companies don't have to Ctrl+F their way to finding the right information, which is manual and susceptible to error. AlphaSense helps business and financial professionals solve this by bringing together thousands of sources, layering AI-driven search on top, so the world's most sophisticated companies can remove uncertainty from their decision-making. AlphaSense's first generative AI offering, Smart Summaries, was the first of its kind available across the market intelligence sector. Now, as the only platform offering AI-driven market intelligence at its current capacity and scale, AlphaSense is equipped to continue delivering innovative technology that not only works but is trustworthy and accurate—critical elements in today's crowded AI environment. Since its founding in 2011, AlphaSense has grown extraordinarily as the demand for AI-driven market intelligence has skyrocketed, raising over \$1B and reaching a \$4B valuation.



Cake AI AI for Application Infrastructure

Cake was incubated at Primary Ventures in NYC, where the co-founders worked to further research and validate their idea. Based out of Williamsburg, Brooklyn, and with \$13M in funding raised to date

from Gradient Ventures, Firestreak Ventures, Primary Venture Partners, and more, Cake solves technical difficulties of organizations adopting and putting into production cutting-edge AI innovations. Cake's platform makes it much easier for AI/ML organizations to stay at the frontier, by providing pre-integrated and production-ready versions of open source innovations.

EnergyHub AI for Cleaner Energy

EnergyHub's vision is a carbon-free, distributed-energy future. Founded in 2007 and headquartered in Downtown Brooklyn, they initially focused on



home energy management through hardware and software before pivoting to focus on software in 2012 and being acquired by Alarm.com in 2013. Today, EnergyHub helps electric utilities transform millions of customer-owned devices — like smart thermostats, electric vehicles, and home batteries — into virtual power plants (VPPs). VPPs allow the grid to operate more efficiently, reliably, and with lower carbon intensity. EnergyHub uses AI to forecast and optimize device behavior so that utilities can leverage these devices in their daily grid operations. Forecasting systems predict the amount of power that a given set of devices will deliver, and machine learning models and optimization algorithms are used to deliver the services that grid operators need. Today, EnergyHub is a leading provider of residential VPPs, with more than 70 utility clients across 30 states and Canada, 1.4 million smart devices under management, and over 170 employees.

Pathways

AI for Sustainable Manufacturing

Founded in 2022 and HQ'd in Brooklyn, Pathways is on a mission to make manufacturing sustainable and to decarbonize the building material industry. While material manufacturers are increasingly required to understand and report on the environmental impact of producing their products, today that often requires time-intensive manual data collection processes that yield static, one-off analyses. Pathways solves this challenge by sitting on top of manufacturers' existing data infrastructure and uses proprietary AI-enabled technology to ingest and transform unstructured data into automated, real-time reporting on emissions—reducing the time-to-value of life cycle assessments and other standardized environmental documents and eliminating manual data collection and re-collection processes.



Playback Health

AI for Medical Transcription

Playback Health's mission is to transform healthcare communication by creating seamless, technology-driven solutions that empower providers and patients. Founded by Dr. David Langer, an NYC-based neurosurgeon, to remove friction around care communication, Playback Health aims to reclaim time

lost to administrative burdens that can detract from patient care and contribute to clinician burnout. The platform leverages AI and ambient listening to record, transcribe, translate, and analyze provider-patient conversations, aiding in documentation and clinical note generation, as well as improving accuracy and efficiency in medical records. By capturing critical details without interrupting the flow of a visit, Playback Health enables providers to focus on their patients. Most users report saving 10 minutes or more per patient encounter, which translates to upwards of 3 hours in documentation time each day. Since launching in 2020, Playback has been used by over 4,000 providers in more than 150 care locations, serving nearly 1 million patients. Playback Pro, their Ambient AI app, was released in early 2024 and has already recorded over 500,000 minutes of clinical conversations, saving an estimated 2.5 years of documentation time. Playback Health was founded, funded, and built in New York City, and today they serve the largest health system in New York State and the most diverse patient population in the world.

Rogo

AI for Financial Firms

Rogo's founders, Gabriel Stengel and John Willett, together wrote their undergraduate thesis on AI applications for econometrics and built an AI chatbot to help economics students find statistical relationships for research use—four years before generative AI entered the mainstream. Now 30-employees strong and with \$26M raised, they founded Rogo, which is on a mission to empower financial users across all levels to focus on the interesting, human-led work that moves markets forward. Deployed across two dozen financial services firms, Rogo automates the low-hanging fruit that consumes the majority of analysts' time and contributes to long working hours. Rogo also expands access to the most important financial and customer data that enables faster, smarter, and more creative decision-making from veteran bankers and investors.



Sanavia Oncology Inc.

AI for Cancer Treatment

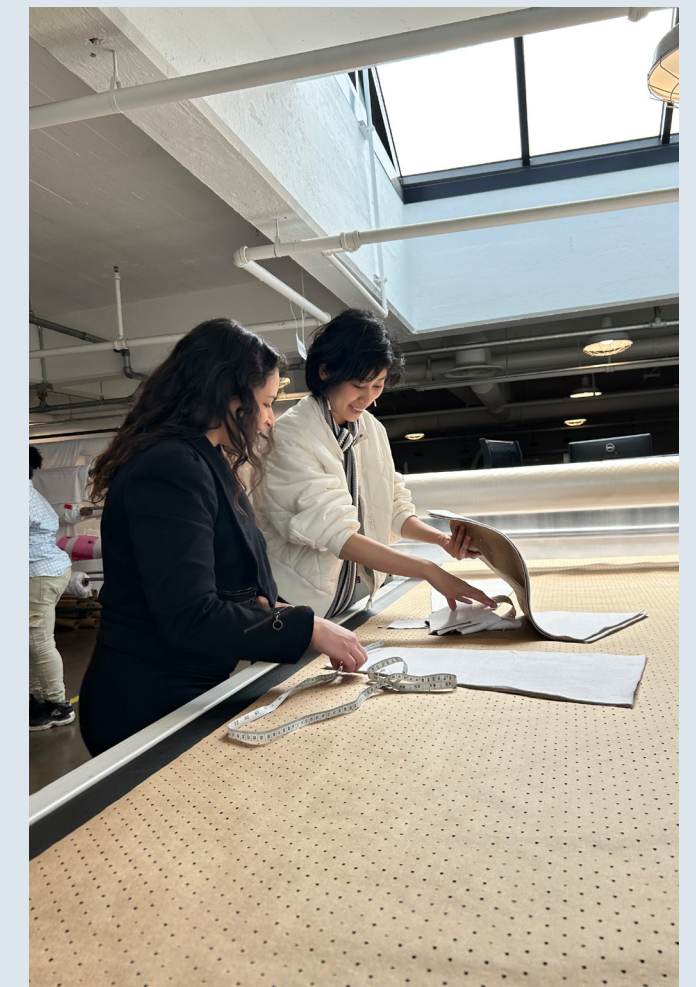
Sanavia Oncology Inc. is a Series A stage, New York City-based biotech company developing novel therapies for cancer patients who do not benefit from current treatments. Sanavia is working on developing safe and effective therapies for cancer patients as efficiently as possible. Sanavia uses AI to increase the breadth of the search for the best molecules for a given target. With structural and functional predictions of molecules, they are able to assess a very large number of molecules per day and use AI for prediction of the target protein structure, drug-protein interactions and physicochemical properties, bioactivity, and toxicity of the drug candidates. Over the last three years, Sanavia built a team from academic medical centers in New York City, including Rockefeller University, Columbia University, Weill Cornell Medicine, and Memorial Sloan-Kettering Cancer Center.



SXD

AI for Zero-Waste Fashion

Founded in NYC, SXD combines award-winning design with bleeding-edge AI technology to deliver real results. Their patent-published SXD AI technology transforms iconic silhouettes to zero waste. SXD AI has demonstrated 10x more material savings than any other solution. SXD's founder Shelly Xu has been creating zero-waste designs in NYC for 15 years—beginning in her Columbia University dorm and now at the SXD studio in NYC. As a former Creative Director from Instagram NY and the inventor of two design-tech patents, Xu feels at home at the intersection of design-tech and in NYC.



AI Venture Capital Firms in New York City

“ Lux was founded in NYC in 2000, and our first AI investment was in 2013 in the Big Apple. We believe NYC is poised to be the next major tech hub for AI because NYC has a bustling cultural and social scene where it’s easy to meet people with incredible research labs (Meta’s AI group is strongly rooted here), and the city has a huge immigrant population of entrepreneurs building companies (take Datadog as a prime example). Simultaneously, New York is the focal point of several different industries, coupled with latent demand from Fortune 500 enterprises headquartered here demanding AI. It’s the best place to recruit candidates and recruit customers.”

— **Grace Isford**
Partner, Lux

Betaworks

Betaworks was founded in New York City in 2007 and has operated out of its location in Manhattan’s Meatpacking District ever since. While Betaworks invests in companies worldwide, they have invested significant time and resources into building a vibrant space in NYC that founders, developers, investors, and the broader tech community can leverage for coworking and events like hackathons, meetups, research discussion groups, and social gatherings.

Betaworks invests across artificial intelligence, machine learning, and data, as well as in areas like gaming, entertainment technology, decentralization, open source, and more. Their thematic accelerator, Camp, is an intensive cohort-based investment program that is one of the core pillars of their fund and was a direct evolution from their early incubation and startup studio model. Betaworks is currently running a Camp themed around AI-native user experiences, with a focus on the application layer. Having invested in companies that train AI models, develop AI infrastructure, and improve the outputs of AI systems, they chose this Camp theme to address the growing gap between the rapid advancement of AI’s capabilities and the availability of ready-made tools for end users to harness this power.



FirstMark

FirstMark was founded in 2008 in New York City and has grown to raise ten funds with over \$4 billion in assets under management. Over the years, FirstMark has backed many companies that went on to major IPOs or exits including Pinterest, Shopify, Airbnb, DraftKings, Frame.io and dozens more. FirstMark



invests across the AI technology stack from core data infrastructure (Cockroach Labs, ClickHouse, SurrealDB) and enterprise AI infrastructure (Dataiku, H Company) to horizontal AI applications (Synthesia, Ada, Hyperscience, Espresso AI) and vertical AI applications (EvolutionIQ). Additionally, FirstMark runs Data Driven NYC, the biggest monthly meetup in the US (20,000 members, 110+ events, 400+ speakers over the last 12 years). They also host The MAD Podcast, a series of weekly conversations with leaders in data/AI, and produce the MAD Landscape, the ultimate market map of the data/AI ecosystem.



Work-Bench

Work-Bench is an enterprise venture capital firm founded and based in NYC with \$375M in assets under management (AUM) and 40 active portfolio companies. While Work-Bench leads seed rounds in enterprise software startups throughout the country, they have built a dynamic enterprise tech community of over 10,000 enterprise founders, operators, VCs, and Fortune 500 executives in NYC to connect on supporting early-stage startups on all things go-to-market.

Work-Bench believes that in the long run, AI will be part of every company in some shape or form. From the application to infrastructure layers, AI is proving to show significant performance improvements across use cases. Work-Bench has found NYC creates a unique ecosystem that fosters innovation and real-world AI applications. Work-Bench hosts nearly 100 events per year and has heavily focused more recent events on topics around how Fortune 500 companies are shaping their AI investment strategies and identifying the emerging winners in this space.



Working and Learning in NYC's AI Ecosystem

Tech employment in the New York Metro has seen a five-year growth of 6.1 percent, outpacing the growth of tech nationwide.^{xxviii} According to SignalFire's State of Talent Report, NYC gained the largest share of tech workers who relocated between 2022 and 2023 while San Francisco experienced the largest share of relocating talent.^{xxix} Today, the tech sector accounts for seven percent of total jobs in the city. Between 2010 and 2021, the city's tech sector added 114,000 jobs—seven times greater than the city's overall job growth.^{xxx}

AI Technical Workforce

In terms of AI jobs, the New York Metro is a major hub for AI job postings and stands in the top three tech talent markets in the United States with the Bay Area and Seattle.^{xxxi} The New York City Metro area is currently home to approximately 40,000 workers with AI-related skills.^{xxxii} The AI workforce in NYC grew nearly 25 percent from 2022-2023, faster than San Francisco Bay Area, Seattle, Boston, or Austin.^{xxxiii} Over the past five years (2018–2023), NYC saw over 90,000 unique AI job postings, led by roles like data scientists, machine learning engineers, and product managers.^{xxxiv} Top employers include financial firms, media companies, and Big Tech giants like Meta, Google, and IBM.

Top NYC Companies Posting AI Job Openings (2018 – 2023)

- JPMorgan Chase
- Verizon
- IBM
- Wells Fargo
- Amazon

In the first half of 2024 alone, NYC listed 17,700 AI job postings, with median salaries exceeding \$152,000 and a 17-day posting duration—well below the 24-day national average. While technical roles dominate NYC's AI ecosystem, non-technical roles are growing rapidly, rising from 27.9 percent of AI job postings in 2020 to 33.8 percent in 2021 and continuing upward. This shift highlights a growing need to upskill non-technical talent with AI capabilities as private-sector adoption expands. Through stakeholder interviews NYCEDC conducted, it is clear that corporations are still in the early stages of experimenting with AI adoption and developing AI strategies. Many are considering the upskilling needs of their workforces.

NYC AI Talent

New York City Public Schools (NYCPS) are committed to leading in understanding ways to harness AI and establishing skills and pathways into emerging tech careers for students. As the largest public school system in the nation and one of the largest in the world with over 900,000 students enrolled across over 1,600 schools, by responsibly integrating AI tools and educating students on ethical considerations of AI, NYC has the unique opportunity to foster equitable education outcomes and prepare our youth for the jobs of the future.

Today, NYCPS has taken on a number of initiatives to support educators and students to learn about and explore AI while facilitating shared learnings across schools. Examples include the “From AI to GenAI in Education” foundational asynchronous course, Day of AI, powered by MIT RAISE, which brought free and open-source AI tools, curriculum, assessments and teacher professional development to NYCPS in May 2024 and trained approximately 100 teachers. From last year to present, professional learning in digital and AI literacy has been completed by 3,000 educators and school leaders, increasing AI literacy with a 72% knowledge gain, and developed pilot tools like the GenAI Algebra Teaching Assistant. Additionally, an AI Policy Lab was launched in partnership with schools around the country which will create guidelines and guardrails for safe, ethical use, recommendations for responsible use, and an open-resource AI policy toolkit and Citywide AI Literacy training to promote a deeper understanding of these technologies and their classroom applications.

With over 120 institutions of higher learning, NYC already has the higher education infrastructure to meet this growing demand for AI talent. Many large research universities already have established AI education programs including Columbia University, New York University, Cornell Tech, and others.

The City College of New York (CCNY) announced a partnership with MIT Sloan School of Management and the Martin Trust Center for MIT Entrepreneurship

to create a new Artificial Intelligence and Entrepreneurship Certificate targeted at undergraduate students. The program will include connecting CCNY students with expert mentors and creating hands-on experiences in using AI to answer real-world questions and solve business problems. This new certificate program, launching pre-requisites in the fall semester, will help students develop their skills in artificial intelligence and set them up for competitive internships and in the job market.

New York City has seen significant growth in education, with the annual number of STEM degrees awarded in NYC increasing by 61 percent between 2011-2021, outpacing the national growth rate of 19 percent, with computer and information sciences being the fastest-growing field, increasing by 217 percent. The number of residents over the age of 25 with a STEM bachelor’s degree rose 27 percent since 2014 to 467,000. This surge in STEM and tech education aligns with the city’s expanding tech job market, positioning NYC for continued growth in this sector.^{xxxv} Across academic institutions within NYC, in 2023, **over 12,500 students graduated with majors that we classify as having technical competency in AI.** In the table to the right you can find year-over-year growth of NYC students graduating within majors preparing them to pursue technical occupations relevant to AI.

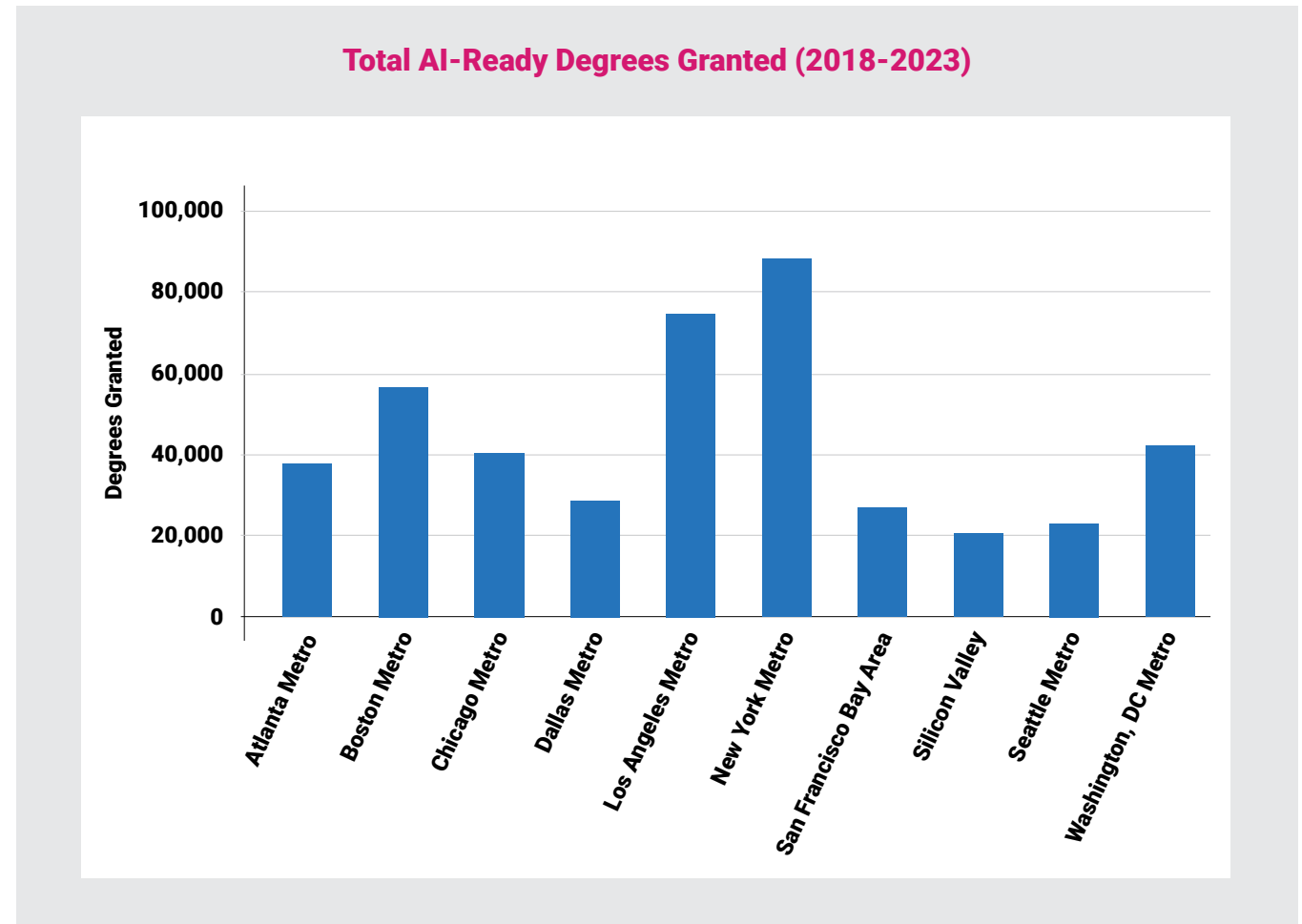
Comparing graduates across major metropolitan areas in the US in the five-year period between 2018 and 2023, **across four different degrees—associate’s, bachelor’s, master’s, and doctorates—the New York City metro leads with over 87,000 graduates with AI-related degrees in the five-year period.**

Across specific degree types, **NYC-metro leads in number of AI-related master’s degree graduates.** In undergraduate degrees, the NYC metro and Los Angeles metro are nearly tied. In PhD graduates, the NYC metro is only slightly behind the Boston and LA metros, meaning that NYC is either leading or on par with other leading metro areas in building the homegrown talent needed to grow AI.

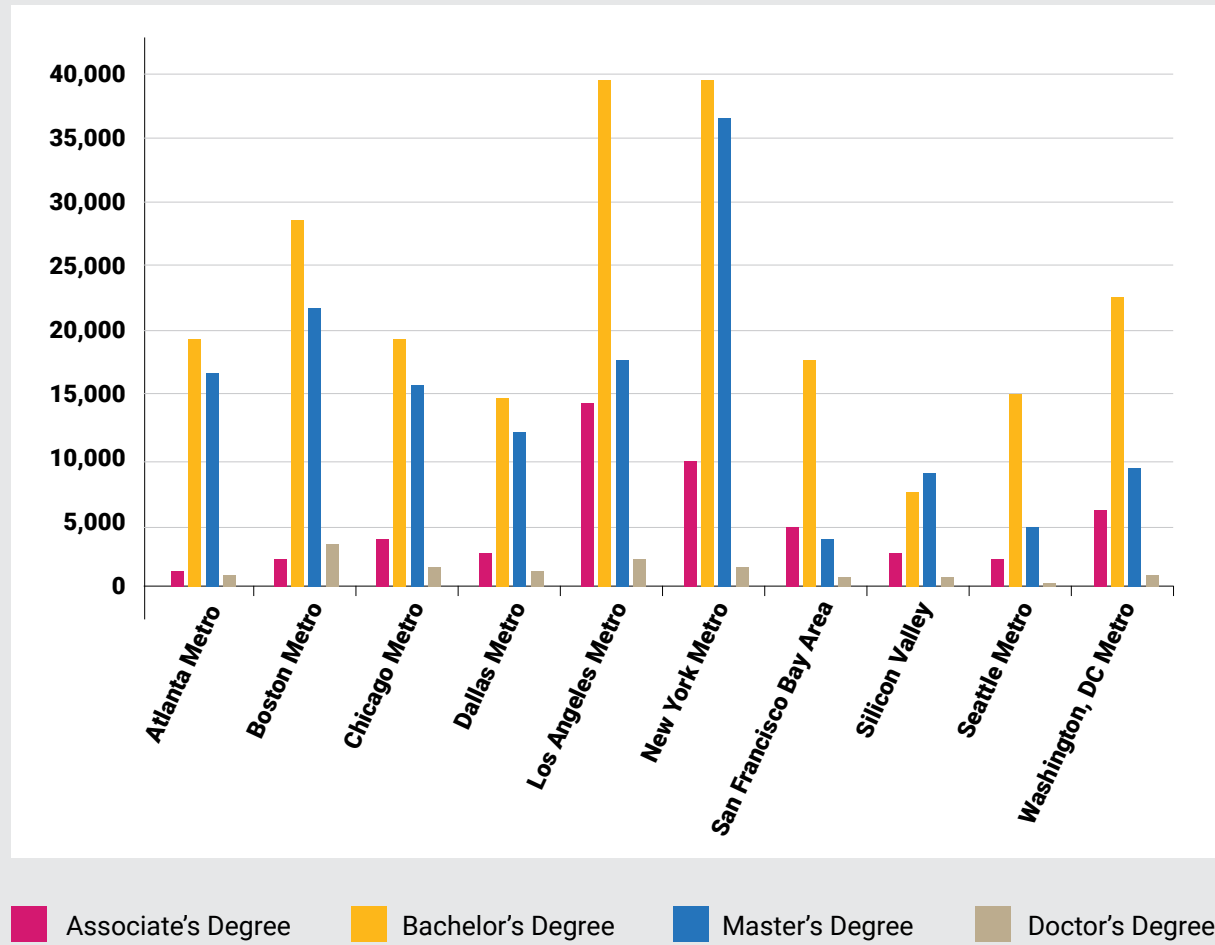
New York City Graduates with AI-relevant Degrees (2018-2023)

	2018 Completions	2019 Completions	2020 Completions
Graduates	8,124	8,785	9,661
YoY % Change	20%	8%	10%

	2021 Completions	2022 Completions	2023 Completions
Graduates	10,672	10,195	12,693
YoY % Change	10%	-4%	25%



AI Ready STEM Graduates (2018-2023)



New York University led the NYC-based institutions graduating AI-ready talent in 2023 with over 3,900 graduates with majors relevant to AI-technical skills while Columbia University ranked second with nearly 3,400 graduates. Across CUNY schools in 2023, CUNY graduated more than 3,100 majors relevant to AI-technical skills with Baruch (446) and Queens College (414) leading with the highest number of graduates across CUNY schools.

This data is further evidence that New York City is well positioned to continue to lead as a top AI talent and job market. NYCEDC will continue to evaluate demand for AI technical talent to ensure NYC institutions have the resources they need to meet private sector demand and continue to train students in the skills and hands on learning needed to enter the AI job market.

AI Bootcamps and Certificates

New York City's technical bootcamp landscape is vibrant and diverse, catering to the growing demand for tech skills including software development, data science, cybersecurity, AI, and digital marketing. The city's bootcamp ecosystem includes a mix of well-established national programs and local institutions that provide intensive, short-term training aimed at helping individuals, particularly career switchers and those from non-traditional backgrounds, gain practical, job-ready tech skills. Appendix D provides an overview of NYC's bootcamp landscape, highlighting some of the programs that provide AI and machine learning exposure and training, either specifically, or through incorporating AI or data science within larger technical programs.

CUNY School AI-Ready STEM Graduates (2023)

CUNY Bernard M Baruch College	446
CUNY Queens College	414
CUNY New York City College of Technology	377
CUNY Hunter College	359
CUNY Borough of Manhattan Community College	297
CUNY Brooklyn College	241
CUNY City College	201
CUNY LaGuardia Community College	138
CUNY College of Staten Island	133
CUNY Graduate School and University Center	124
CUNY Lehman College	123
CUNY Queensborough Community College	94
CUNY York College	48
CUNY Bronx Community College	33
CUNY Stella and Charles Guttman Community College	27
CUNY Kingsborough Community College	20
CUNY Hostos Community College	16
CUNY Medgar Evers College	13
CUNY John Jay College of Criminal Justice	11

Case Study: Simons Foundation and CUNY

Announced in early 2024, Simons Foundation International announced a \$75 million gift to CUNY, the largest donation in the University's history. Of that donation, \$25 million is designated for CUNY's participation in Empire AI, the State of NY's initiative to support computational power across a consortium of academic partners. The remaining \$50 million was earmarked towards the establishment of a new Master's in Computational Science to be housed at the Graduate Center with the goal of commencing in the fall semester of 2026. Funding will also support hiring of twenty-five new faculty and creating workforce development opportunities relevant to AI and computational science for students and faculty.



“ My journey into the world of AI is fueled by my passion for enhancing human potential, especially in the context of health and fitness. Growing up in Queens, I’ve witnessed firsthand the diverse challenges faced by my community, and I’m driven to create solutions that empower individuals to thrive mentally and physically. ”

— **Andrew Lam**
AI Prompt Engineer, Dailyhuman



Andrew Lam
AI Prompt Engineer, Dailyhuman

Andrew is a Queens native working to develop and optimize AI models at Dailyhuman, which is tackling the lack of training and resources for sports coaches to effectively teach mental skills including confidence, resilience, and mindfulness to empower athletes and coaches alike. A computer science student at John Jay College of Criminal Justice, Andrew feels that the City University of New York (CUNY) has been instrumental in shaping his path in AI. Through his experience with the Data Science Fellowship at CUNY Tech Prep, he is gaining valuable hands-on experiences that are helping him develop essential skills in data analysis and machine learning. Additionally, as a participant in the NYC Startup Internship Program operated by Company Ventures, he was connected to an internship experience at Dailyhuman, enhancing his practical experience which led to his current position.



Jonathan Frankle
Chief AI Scientist, Databricks

As Chief AI Scientist, Jonathan’s job is to ensure Databricks keeps up with and improves the state of the art in AI, as relevant to their customers and products. Jonathan oversees the AI research team, which comprises 40 AI research scientists who develop new AI techniques, and he makes connections between the team’s science and the company’s products.

With a BSE and MSE in Computer Science and a PhD in Artificial Intelligence, Jonathan had internships at many of the AI-focused teams at major firms including Google NYC, Google Brain, and Facebook AI Research. In 2018, Jonathan published a well-known paper on new ways to train neural networks efficiently, and in 2020, he and his co-founders incorporated MosaicML and spent the next three years building a startup to help enterprises train their own AI systems and LLMs from scratch. MosaicML raised a seed round in December 2020 and their Series A in mid-2021 and opened a New York office in 2022. In July 2023, with around 60 employees, 10 of whom were located in NYC, they were acquired by Databricks for \$1.3B. As part of Databricks, they continue to grow the size of their team and New York City presence. Half of Databricks’ AI research team is now in New York City.



Kynneddy Smith
Research Intern, Microsoft Research

Inspired by her experience participating as a youth in Indeed We Code, a coding camp for Black girls, Kynneddy was able to meet with successful Black women who were software engineers, researchers, university administrators, and NASA scientists. Now a senior at Columbia University, Kynneddy is double majoring in computer science and cognitive science with specializations in AI and human-computer interaction (HCI), and she is a twice-published student researcher and aspiring PhD candidate. Kynneddy works to build, test, and evaluate new AI workflows and tests them with real users. She also works to categorize and analyze AI research to create suggestions for future AI innovations.

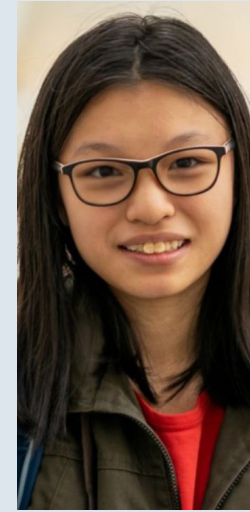
Outside of her research and coursework, Kynneddy serves in advisory board positions with the nonprofit Girls Who Code and a startup called Inner Peak AI. With Girls Who Code, she advises on ways to improve computer science programming for young girls and pre-professionals and how to utilize AI in this education. With Inner Peak AI, she helps test and develop an AI-powered therapy platform for youth. Kynneddy's work focuses on aligning AI to our social and cultural needs and utilizing AI to improve interpersonal communication and connections between people of different backgrounds.



Liutong Zhou
Senior Machine Learning Scientist, Apple

Liutong moved to New York City in 2015 to further his studies in machine learning and AI, receiving two master's degrees at Columbia University. He began his career at WorkFusion, an NYC-based startup, as a research ML scientist, applying deep learning to robotic process automation and later joined Amazon Web Services, specializing in enterprise-level NLP models. Today, in his role at Apple, Liutong leads the research and development of personalized recommendation solutions and large language model (LLM) features to elevate user experiences across Apple's native services. With a focus on privacy-first design, Liutong's work ensures that user data remains secure through on-device processing and custom Private Cloud Compute (PCC) systems built with Apple's own silicon.

Liutong's journey into AI began with a research thesis at Tsinghua University, where he explored large-scale data mining for intelligent transportation systems. This sparked a deeper interest in data-driven insights and led him to New York City for his master's degrees.



Mei Lee
Software Engineer, Warner Bros. Discovery

Mei is a born-and-raised New Yorker. Having studied math and computer science at NYU, she developed analytical and technical skills that she's applied to a variety of internships and roles throughout her career. As a data analyst intern at Pfizer, Mei generated business performance reports and developed tools to evaluate data quality. She built efficiencies in the work by writing SQL queries to pull data directly and received an offer to continue working part-time as she further pursued her degree. Following this experience, Mei joined JPMorgan Chase as a technology strategy intern working on competitive analyses of use cases by financial services firms utilizing AI and ML.

Today, at Warner Bros. Discovery, Mei works on the search and personalization team to distribute Max's original and branded content internationally to users. She is developing new features for her team's APIs to enhance users' search and browsing experiences. She also helps build pipelines that power ML models, including preparing data; evaluating model performance; and finally, serving and deploying the model.



AI Training Providers in New York City | ■

“New York City is the most diverse city in the world—diverse in culture, creativity, and community. Diversity positions us as leaders in AI because when you put this tool in the hands of dreamers and doers who have a wide range of lived experiences, you accelerate ideas that solve real problems and have a tangible impact on people in every corner around the world, not just the one percent who want to catch a taxi faster.”

— **Perfecto Sanchez**

Co-Founder & Chief Growth Officer, Equity Quotient

Break Through Tech, an initiative of Cornell Tech

Break Through Tech, an initiative of Cornell Tech, is changing the path to power by propelling female tech talent into fields that are defining the future. Founded in 2016 by Dr. Judy Spitz, former CIO of Verizon, Break Through Tech empowers, trains, and connects students to professional opportunities at influential businesses across sectors. This year, the Break Through Tech AI Program will provide 1,000 undergraduates from 200+ schools across the United States with industry-focused AI/ML skills training, industry mentorship, professional readiness training, and opportunities to work on real-world AI/ML projects for major employers and research institutions. Break Through Tech's goal is for each student to receive a paid summer internship or job in tech within six months of graduation, and they have been able to achieve a placement rate around 80 percent by partnering with more than 200 employers nationwide.



Day of AI

Day of AI was founded in June 2021 with a mission of empowering schools and students to thrive in a world of AI. Day of AI strives to introduce K-12 students to artificial intelligence (AI) and demonstrate

how it shapes their lives. This initiative provides a free, hands-on curriculum of lessons and activities designed in collaboration with a team of researchers at MIT RAISE. The curriculum is accessible to students of all backgrounds and abilities, and it aims to empower educators with little or no technology background to teach AI concepts effectively. Today, Day of AI programming is run in schools in all 50 states and over 130 countries worldwide with the aim for students completing their programs to understand what AI is and how they can use AI responsibly and productively in their own lives. Day of AI helps students learn to see AI as an opportunity rather than a threat to their future and feel agency in using AI to make their future world a better place for all.



Girls Who Code

Girls Who Code is an international nonprofit organization working to close the gender gap in technology, and is leading the movement to inspire, educate, and equip students who identify as girls or nonbinary with the computing skills needed to pursue 21st-century opportunities. Since launching in 2012, Girls Who Code has reached 670,000 students through their in-person and virtual programming. Of Girls Who Code alumni, 218,000 are college- or career-aged, and at least half of their students come from historically underrepresented groups. Girls Who Code has integrated AI training and tools across their

programming spanning from 3rd grade through early career. Their AI curriculum will reach over 200,000 students in the US and they have launched two new AI programs and a Data Science course. Additionally, Girls Who Code is teaching students how to use AI for financial literacy, producing music, and so much more.



tech professionals at companies like Google, Adobe, IBM, Dell, Disney, Spotify, and more, who assist students in navigating STEM and AI career paths. During the 2023-24 school year, more than 300 tech professionals volunteered to help NYC students.



New York Hall of Science (NYSCI)

Founded in 1964, NYSCI is a hands-on science center in Queens that welcomes 500,000 visitors annually. With support from the National Science Foundation (NSF), NYSCI has convened AI researchers, industry experts, learning scientists, and education practitioners to identify roles that informal learning institutions can play in fostering AI literacy and human agency with AI. NYSCI also serves as an outreach partner for the NSF-funded Artificial and Natural Intelligence Institute (ARNI), a \$20 million, five-year project led by Columbia University. As part of this work, NYSCI supports a Youth Fellowship program, through which high school and college students learn about AI and neuroscience research and develop interactive public engagement activities. Although in its early stages, NYSCI's work with ARNI has the potential to reach 350,000-500,000 children and families through the regular rotation of museum-based activities developed to promote understanding about AI and natural intelligence. NYSCI also has a body of federally funded work in which they are developing curricula and programs across data

science, quantum computing, and computational thinking, and with funding from the Department of Education, NYSCI staff have partnered with NYC teachers and Design I/O to develop an open-world digital game that encourages computational and algorithmic thinking to address ecological sustainability issues.



NYSCI additionally hosts quarterly STEM Career Nights for NYC middle and high school students, along with their families, to learn about future careers in AI and STEM, and their computational thinking programs have reached 113 teachers and 4,000 students throughout District 24 in Queens to date.



2

New York City Occupations and AI Exposure | ■



AI and NYC Labor Market Impacts

While still early in the AI evolution, there has been little evidence to date on the impact of generative AI on jobs (either positively or negatively). Labor impacts and the future of work as impacted by technology including artificial intelligence have been extensively researched and remains a topic of significant debate. Scholars, policymakers, and industry leaders continue to analyze how AI will reshape job markets, redefine skill requirements, and influence workforce dynamics across industries. However, it is commonly agreed upon that AI will both create new jobs while making other jobs or functions obsolete through displacement—the process where technology renders specific functions unnecessary or replaces them with automated systems. However, thought leaders have very different forecasts for the time period over which we can expect to see significant shifts in the labor

market and the speed of generative AI adoption across different tasks, occupations, industries, and economies. While the World Economic Forum predicts that nearly half of workers' core skills will be disrupted by 2027,^{xxxvi} McKinsey projects the New York City region will add 200,000 net jobs by 2030 on factors including adoption of AI and other technological shifts, as well as increased demand for healthcare services and infrastructure investment.^{xxxvii}

Generative AI is reshaping the workforce in three main ways: through the creation of new roles, displacing certain occupations, and augmenting others—meaning it will enhance existing roles by automating certain tasks while allowing workers to focus on higher-level functions. There are also jobs that may be minimally impacted by Generative AI.

- **“New occupations”** are those new or emerging occupations that are made possible by advancements in generative AI. For example, AI prompt engineers are emerging as engineering specialists who design, refine, and test prompts to guide AI systems in generating more accurate and relevant outputs.
- **“Augmented occupations”** are occupations that exist today and will leverage generative AI to boost productivity and focus on higher-value tasks. For example, financial analysts are increasingly using AI to process large volumes of data, detect patterns, and forecast trends. With AI managing these routine tasks, analysts can focus on interpreting this data, creating insights and making recommendations, enhancing productivity and enabling analysts to add greater value in their role.

- **“Displaced occupations”** are occupations that exist today, but where technological advancements like GenAI may reduce or replace the need for workers. For example, as AI-powered chatbots and voice recognition technology become more sophisticated, routine customer service questions can be handled without human intervention, reducing the need for traditional call center agents to handle these inquiries.
- **“Minimally impacted occupations”** are simply jobs that will not be impacted by generative AI in the near-to-medium term, based on the currently understood capabilities of generative AI. These jobs generally involve in-person interaction, like caregiving, or hands-on problem solving like construction workers, emergency responders, or mechanics.

Finally, researchers often talk about the impact of generative AI in terms of “occupational shifts” or “occupational transitions.” A worker undergoes an occupational shift when they change jobs. In the context of generative AI, a worker may undergo an occupational shift if they move from a displaced occupation to another occupation. However, an occupational shift would also occur if a worker changed jobs and moved into a new occupation related to generative AI. Essentially, not all occupational shifts result from workers getting displaced from their existing jobs and also could reflect workers moving into frontier occupations of the economy.

McKinsey specifically looked at how generative AI would impact job transitions in the broader New York City region.^{xxxviii} Their researchers anticipate 1.1 million occupational shifts by 2030 in the broader NYC region, as roles are redefined, displaced, or newly created due to advanced technologies—with 380,000 occupational shifts directly attributed to generative AI.^{xxxix} These shifts reflect the ways that the labor market adapts

to technology. The remaining shifts are attributed to larger labor market trends including ongoing effects of the pandemic, shifts to e-commerce and remote work, increasing demand for healthcare workers with an aging population, and broader automation trends. However, their research states that generative AI will primarily augment work, rather than replace jobs.

NYCEDC researchers were motivated to take a task-based and occupational-based lens to understand how generative AI will impact New York City’s labor force, as generative AI may have nuanced impacts at an industry level, perhaps augmenting some jobs while displacing others. Utilizing a methodology similar to Goldman Sachs, NYCEDC analyzed NYC occupations to measure the share of tasks, as defined by US Department of Labor’s Occupational Information Network (O*NET), exposed to AI automation.^{xi}

Specifically, we assume that if 50 percent or more of an occupation’s tasks are likely to be automated by generative AI, this occupation is at risk of displacement, while occupations with at least 10

percent but no more than 50 percent of tasks likely to be automated by generative AI are occupations likely to be augmented by generative AI.

Of the 4.5 million 2023 public and private total jobs in NYC, we found a range of 942,000 to 2.2 million will likely be augmented by AI (21-49 percent of New York City jobs). This is slightly lower than the nationwide forecasts which anticipates 24-55 percent jobs likely to be augmented. One major difference is that New York City is home to a disproportionate share of leadership roles, which require strategic decision-

making and management skills that are beyond the current or expected near-term capabilities of generative AI tools.

The chart below shows the NYC occupational impacts of generative AI.

NYCEDC research found that **for every job that gets displaced by AI, between four and ten jobs might be augmented by AI.** Over the next ten years, we found that 244,000 of today’s NYC jobs are at risk of displacement, approximately five percent

Occupational Impacts of Generative AI in NYC

New Emerging Occupations Made Possible by GenAI Advancements	Minimally Impacted Occupations	Augmented Occupations in Low-augmentation Scenario (at Least 10% but no More than 50% of Tasks Automatable)	Augmented Occupations in a High-Augmentation Scenario (at Least 25% but No More than 50% of Tasks Automatable)	Displaced Occupations
Prompt Engineers	Home Health Aides	Retail Salespersons	Retail Salespersons	Customer Service Representatives
AI Compliance Officers	Registered Nurses	Office Clerks	Fast Food and Counter Workers	Cashiers
Chief AI Officers	Janitors and Cleaners	Secretaries and Admin Assistants	Security Guards	Public Relations Specialists

of all jobs, compared to anticipated seven percent job displacement nationwide. Broadly, many of these displaced jobs are low- and medium-wage occupations. Each of these most common displaced occupations has 52 percent of tasks that are likely to be automated by generative AI, i.e. just over the 50 percent displacement threshold. Therefore, it is reasonable to conclude that the ultimate impact of generative AI on the economy depends on how quickly and intensively the technology is adopted.

While it is hard to predict the speed of GenAI adoption within the New York City economy, NYCEDC will continue to monitor these labor and occupational trends and impacts to help inform workforce development programs and curriculum to meet changing demands.

3

NYCEDC's Foundational Investments in NYC's Tech and AI Ecosystem | ■



Accelerating NYC's Tech Sector

Over the last decade, NYCEDC has made investments to diversify our economy and grow the tech ecosystem focused on foundational elements critical to a thriving ecosystem including growing talent in engineering and applied sciences, building tech clusters, and supporting innovation through tech competitions and piloting opportunities. While NYCEDC's past investments in the tech sector have been varied and diverse, many foundational investments have supported emerging technologies including AI.

These investments include the creation of the Data Science Institute at Columbia University in 2012 which today represents 400+ affiliated faculty across 17 Columbia schools and has conferred 1,295 MS in Data Science degrees since 2012. By facilitating the creation of Cornell Tech on Roosevelt Island, additional STEM talent has been developed in NYC while also housing award-

winning researchers who are driving discoveries in new AI theories, methods, and applications. Cornell Tech has since spun out over 100 startups with a combined total valuation of \$695 million; 94 percent of the spinouts are headquartered in New York City. One thousand alumni of Cornell Tech are employed in New York City today with 55 percent employed within the tech sector.

NYC Media Lab, built in partnership with NYCEDC and the Mayor's Office of Media and Entertainment (MOME), is dedicated to driving innovation and job growth in media and technology. Their programs and events have long supported AI innovation from running an AI and the Business of Music Challenge with ASCAP Lab exploring AI solutions transforming the music industry, to events and challenges around the creative industries and AI.

In 2019, NYCEDC issued a request for expression of interest (RFEI) for the establishment of a Center for Responsible AI, an innovation, collaboration, and applied research space designed to support the creation of responsible data science and AI in New York City. While the impact of COVID-19 led the City to pause the procurement and redirect resources to pandemic response, NYU soon thereafter launched its own Center for Responsible AI dedicated to tech policy, education and training, and interdisciplinary research.

NYCEDC contributions have helped catalyze the growth of the tech sector through investments in critical projects ranging from NYU Future Labs, Urban Tech Hubs at Newlab and Company Ventures, the creation of Cornell Tech, and millions of additional dollars helping to fill gaps in the ecosystem and propel the adoption and growth of technology in NYC.

NYC AI startups thrive thanks to the city's robust ecosystem of over 200 coworking spaces and more than 100 incubators and accelerators spread throughout the five boroughs, many of which are supporting AI companies. These resources have been instrumental in driving the growth of early-

stage startups, fostering innovation, and scaling their operations. NYCEDC has played a pivotal role in establishing many of these incubators and accelerators, and today continues its commitment to tech entrepreneurship and equity through initiatives like the annual Founder Fellowship, which empowers NYC-based tech founders to succeed. Designed to improve access to capital and networks for underrepresented founders across all tech-enabled sectors, the Founder Fellowship has graduated over 160 startups to date. The 2025 cohort will serve 75 startups across five program operators: Chloe Capital, Company Ventures, Gold House, Newlab, and Visible Hands. NYCEDC's investment in this program has catalyzed nearly \$1 million in capital commitments—both dilutive and non-dilutive—from its private sector partners, which will be invested in tech startups selected for the 2025 program. The 2025 cohort is expected to attract many AI startups and OpenAI will be providing \$5,000 in API credits to each founding team, doubling their standard startup offering.

Beyond the work that NYCEDC is doing to support the growth of AI in NYC, the City and State of New York have been making a variety of foundational efforts to seize the opportunity of AI and machine learning.



Timeline of New York City and State AI-Investments and Actions



NYC Leadership in AI Governance for Public Sector

The NYC Office of Technology and Innovation leads city government efforts on the use and governance of AI. In October 2023, Mayor Eric Adams and Chief Technology Officer Matthew Fraser released the New York City AI Action Plan, the nation's first comprehensive strategy of its kind, which outlined 37 commitments across seven initiatives focused on supporting city agencies' efforts to understand and responsibly use AI tools, fostering appropriate governance across the city, and collaborating with leaders in this emerging technology field and the general public to make sure it serves the needs of New Yorkers. In the first year since publication, OTI initiated or completed 30 of the 37 actions described in the plan.

Infrastructure and R&D

The City and State of New York are advancing AI innovation and adoption, creating significant economic development opportunities. Chips and semiconductors are fundamental elements to an AI ecosystem as

they provide the computational power needed for AI to function. New York State has been emerging as a leader in the development of the advanced infrastructure needed to support the growth and adoption of AI. Investments include the following:

- **Empire AI Consortium:** Launched in April 2024, Empire AI is a partnership of New York's leading public and private universities coming together to establish a state-of-the-art artificial intelligence computing center, housed at SUNY's University at Buffalo, to facilitate statewide innovation, research, and development of AI technologies. Empire AI puts New York State and New York City at the forefront of building and attracting the next generation of tech talent.
- **Green CHIPS:** Propelled by the federal CHIPS Act, Green CHIPS, a \$10 billion companion economic incentive allocation made available by the State of New York, is supporting an emerging robust semiconductor ecosystem across the state. This includes global leaders like Wolfspeed; GlobalFoundries; onsemi; IBM; Edwards Vacuum; and the future site of Micron, the world's fourth largest semiconductor company, which is investing \$100 billion to build the largest megafab in US history in upstate New York creating 50,000 new jobs. New York State is poised to play a critical role in the development of next-generation AI chip technology.
- **NY Creates:** Located in Albany, NY Creates is the most advanced publicly owned semiconductor facility in North America. In addition to investments in 2023 to expand the Albany NanoTech Complex with new space, fabs, and equipment, NY Creates was recently awarded the first National Semiconductor Technology Facility in the nation. The Extreme Ultraviolet Accelerator (EUV) designation unlocks \$825 million in CHIPS act funding to launch the first of three chip R&D facilities in the nation, further positioning New York as a destination for R&D of innovative chip technology.

AI Regulation and Data Initiatives

NYC's urban infrastructure, healthcare, and other public sectors produce vast dataset that can provide a powerful resource for AI training and innovation. Robust open-data initiatives, and strategic efforts to support data sharing across the private sector are important foundations to support AI research and application development that can address the public interest. Additionally, thoughtful and adaptive regulations will be crucial to balancing the need for commercial innovation while addressing ethical considerations, data privacy, security, and the responsible deployment of AI technologies.



Governor Kathy Hochul announces first phase of Empire AI, October 2024. Credit: Mike Groll/Office of Governor Kathy Hochul

Case Study: Empire AI

Empire AI, a \$400 million public-private partnership, was announced by Governor Hochul in 2024 to make New York a national leader in AI research and innovation. This first-in-the-nation consortium of public and private research institutions will advance AI research for the public good. With seven founding institutions, including five universities and research institutions based in NYC, Empire AI will create the shared computer resources, to be housed at the University at Buffalo, needed to spur innovation and fast-track cutting edge research. In addition to the State University of New York (SUNY) and Rensselaer Polytechnic Institute, Columbia University, Cornell Tech, City University of New York (CUNY), New York University, and Simons Foundation's participation in the consortium will ensure New York City is at the forefront of AI research and commercialization.

4

Challenges, Concerns, and Responsible AI | ■



Balancing Private Sector Opportunity, Responsibility, and Regulation in AI

While AI is anticipated to boost the local economy and create opportunities to benefit society, it is important to consider a range of concerns about AI, including ethics, accountability, fairness, privacy, and security, collectively referred to as responsible AI. While AI regulation is needed to address these risks, the uncertainty of the regulatory environment also poses a threat to widespread adoption of AI across the private sector. Clear regulatory frameworks are important

in creating an environment that fosters private sector innovation, enabling companies to confidently invest in developing and deploying AI solutions. An additional concern around AI development and use is its energy requirements. Energy required to power AI raises questions about the ways AI might facilitate the energy transition or contribute to increased emissions itself.



Privacy and Security

Data privacy protection has been gaining widespread attention as a primary concern related to the growth of AI, since the need for data to improve machine learning and LLMs is limitless. This can result in businesses leveraging proprietary or sensitive data, such as personally identifiable information, to create more relevant or accurate experiences and responses. This, in turn, can increase the potential dangers of unauthorized access and data breaches.

It is therefore critical that safeguards are put in place to protect businesses, consumers, and their data. Robust data security measures are essential to mitigating risks and ensuring that the use of AI remains secure, trustworthy, and aligned with both security and privacy regulations.

Concurrently, the opportunities and use cases for AI to support businesses' cybersecurity efforts continue to expand, performing critical functions like threat and anomaly detection as well as automated penetration testing to discover vulnerabilities. The federal government and many states are taking efforts to improve security and privacy legislation as it relates to AI.

Bias and Discrimination

It is important to note the role that human bias and discrimination plays in AI, from the person building the model down to the data that is collected to inform the model, how representative the data is, and if the data set reflects larger systemic biases. AI bias disproportionately impacts communities that have historically and presently face oppression, further causing irrevocable harm. Facial recognition software that failed to accurately identify Black faces is one such example. It is critical that governance is put into place for the protection of individuals and vulnerable groups. NYC has been a leader in this aspect of responsible AI and mitigating harms and risks of AI. In 2021, NYC passed the first law in the country around the use of AI in hiring, requiring disclosures to applicants on the use of AI and independent annual bias audit.

Accountability

Much has been said about who is held accountable for the outputs, decisions, or impacts that result from the use of AI. Clear standards and regulations are essential to safeguard rights and promote responsible use.



Energy Consumption

The electricity needed to power AI data centers is significantly larger than traditional internet use. Goldman Sachs predicts that US data centers will use eight percent of US power by 2030, compared with three percent in 2022, an increase largely attributed to AI.^{xii} Hyperscalers, meaning large cloud service providers like AWS, Google, Microsoft, IBM, and Oracle, are the largest drivers of growth and associated energy use, placing further strain on electrical grids and putting these organizations' sustainability goals into question. While AI may be leveraged to support the energy transition and new innovations are creating improved efficiencies, it's important to recognize the resource-intensive needs of training AI models.

NYC Responsible AI Leadership

Leadership in responsible AI is crucial for building a strong ecosystem. By fostering trust, establishing ethical standards, encouraging collaboration, and

addressing societal challenges, responsible AI leadership not only enhances the development and deployment of AI technologies but also ensures that they contribute positively to society as a whole. NYC's AI Action Plan provides governance frameworks and guidance specifically for government use of AI. New York City is also home to a dynamic ecosystem of organizations, research groups, and think tanks that are advancing AI for social good. These groups are tackling challenges in areas like education, humanitarian aid, and environmental sustainability while also shaping policy and governance to promote responsible AI development and deployment. See Appendix B which highlights a subset of NYC-based nonprofits and think tanks.

5

Actions to Unlock New York City's AI Potential | ■



Artificial Intelligence Commitments

NYCEDC's vision is to advance NYC's position as the global hub of Applied AI, harnessing its potential to drive economic growth. We will support AI adoption across industry sectors by fostering a vibrant ecosystem of AI startups, with a focus on those led by diverse founders and the venture capitalists that invest in them. Additionally, we are committed to developing an AI-ready workforce that reflects the city's rich diversity.

This chapter lays out 18 initiatives that will create impact across all five boroughs to ensure NYC

meets its AI potential. The initiatives support three key goals:

- Advance New York City's position as the global leader in Applied AI
- Foster new business creation and partnerships to build a dynamic and prosperous AI ecosystem
- Develop a diverse AI-ready workforce to power the future of the economy

Goals and Initiatives |

Goal 1: **Advance New York City's position as the global leader in Applied AI**

New York City is already leading as an Applied AI hub. To strengthen competitiveness and future readiness of NYC industries, our strategy includes fostering innovation in NYC's vibrant entrepreneurial ecosystem and emphasizing AI as a cornerstone of NYC's economic landscape that fuels sustainable economic growth.

New Programs for 2025:

Initiative 1:
Promote NYC as a leading hub for AI innovation to attract ongoing investment and create jobs that support the city's economy

NYCEDC will partner with Tech:NYC to launch a campaign that highlights the tech ecosystem with a focus on AI adoption and innovation in NYC. This campaign, aiming to launch in the first half of 2025, will highlight the tech founders, corporate innovators, researchers, and talent that sets NYC's tech ecosystem apart. The campaign will activate a series of diverse NYC thought leaders and experts for public speaking engagements and press. Additionally, new

events will be created to further New York's positioning as an innovation and AI capital and a quarterly snapshot focused on the tech ecosystem with AI subsector highlights will be created.

Initiative 2: **Create and launch an AI Advisory Council**

NYCEDC, in partnership with Tech:NYC, will create a new AI Advisory Council. This group will serve as ambassadors for NYC's AI community and help inform NYCEDC's initiatives to ensure AI in NYC supports the growth of our economy across all sectors and businesses both large and small. To consist of AI leaders and investors, this group will meet regularly. The Council will publish and promote research on the financial impact, growth, size, and activity of the AI community in New York.

Programs Already Underway:

Initiative 3:
Advance the health and life sciences industry in NYC by adopting emerging technologies including artificial intelligence and machine learning

In 2023, Mayor Adams and Governor Hochul announced the Science Park and Research Campus



NYCEDC President & CEO Andrew Kimball delivers remarks at the launch of the Global AI Frontier Lab in Brooklyn, NY, September 2024.

(SPARC) Kips Bay Master Plan, a first-of-its-kind life sciences innovation, career, and education hub that will anchor the city's industry. Since the announcement, NYCEDC issued an RFEI to identify a world-class anchor tenant to establish and operate a cutting-edge life sciences center. Capitalized with \$100 million of City Capital, this future industry innovation hub will further catalyze a new era of health and life sciences powered by data, artificial intelligence, and machine learning.

Initiative 4:
Globally market incentives and programs to attract and retain a vibrant AI ecosystem

Through its Business Development team, NYCEDC will work to put the City and State's suite of tax incentives, including discretionary and as-of-right benefits, to work to attract global and domestic AI firms, including those innovating the acceleration of drug discovery and clinical development, to open and expand offices in NYC. The Business Development team works as a partner to startups and companies in their business expansion and relocation needs. The recently announced International Landing Pad program will create a network of operators who will provide a one-stop shop for growth-stage international companies in innovation industries, including AI. The forthcoming

Landing Pad Network will offer services such as dedicated office space; technical advising; and support for business development, administration, fundraising, networking, and immigration services that international AI firms can benefit from as they expand into the NYC market.

Initiative 5:
Leverage challenge-based procurement for AI-adoption by City agencies to address city challenges

NYCEDC partnered with Cornell Tech to advance and modernize City procurement and codify "challenge-based procurement." Now approved by the Procurement Policy Board (PPB), challenge-based procurement allows a government agency to identify a challenge it is trying to solve, and rather than writing a prescriptive solution, invites the market to propose creative solutions. A pilot phase, in which the City can try multiple vendors' products, is built into the process and contracts can be awarded based off pilot successes. The Mayor's Office of Contract Services will lead the effort to ensure that City agencies are aware of the opportunities offered by challenge-based procurement, and with the Office of Technology and Innovation, will work with agencies to leverage new technologies and tools to pilot and test AI solutions prior to full-scale implementation to address city challenges.

Goal 2:
Foster new business creation and corporate partnerships to build a dynamic and prosperous AI ecosystem

With one in eight businesses formed in New York City in the last year—about 23,400 businesses—New York City is powered by small businesses and entrepreneurship. We will support the adoption of AI across NYC’s legacy industries—including small- and medium-sized businesses—by building connections between industries and innovators early in their process to help cultivate and proliferate AI applications for less AI-ready segments of NYC’s economy. This will drive innovation and AI adoption, leading to economic growth while establishing NYC as a global leader in AI.

New Programs for 2025:

Initiative 6:
Develop programs to support the adoption of AI technological transformations across NYC industries

NYCEDC seeks to support NYC industries and firms in seizing their greatest opportunities using AI. Staying ahead of the AI curve is crucial for industries and businesses to remain competitive and resilient. Without City engagement, there is a risk of uneven adoption across NYC sectors and those that do not adopt AI may be left behind. To accelerate AI-based innovation and adoption across NYC’s economy and workforce, NYCEDC will issue a request for proposals (RFP) to establish the “NYC AI Nexus.”

The AI Nexus will facilitate collaborations between NYC-based startups and founders with NYC’s businesses to identify, build, and ultimately adopt Applied AI solutions to ensure the continued competitiveness of NYC’s key industries. It is anticipated that the AI Nexus will create 10-25 new ventures each year, providing solutions for three to five primary industry sectors of NYC’s economy.

The AI Nexus initiative is a multi-year commitment that seeks bold approaches to drive AI adoption and

make AI accessible across all sectors and types of businesses to ensure certain segments of NYC’s economy do not fall behind. The AI Nexus will support connections between industry and innovators to help ideate new products and solve challenges that are useful to businesses, ensuring that businesses across a variety of sectors and that firms of all sizes can benefit from and understand the value of AI adoption.

Programs Already Underway:

Initiative 7:
Support underrepresented NYC tech founders leveraging AI with resources they need to grow

Since launching the Founder Fellowship program in 2022, NYCEDC has supported more than 250 entrepreneurs across 168 companies, of which nearly 80 percent include a BIPOC founder. These firms raised over \$22 million in venture capital and grant funding during their approximately four-month-long program. The Founder Fellowship provides tech-enabled startups with much-needed access to resources and networks to help them grow their companies. The 2025 edition of the Founder Fellowship will support 75 diverse-led NYC startups across five partners, Chloe Capital, Company Ventures, Gold House Ventures, Newlab, and Visible Hands and is creating nearly \$1 million in private sector funding commitments directly into its participants. NYCEDC is partnering with OpenAI, who will provide \$5,000 worth of API credits to each participating Fellow team, doubling what is typically available to startups, which will attract a cohort of founders at the cutting edge of AI application.

Initiative 8:
Attract AI events to NYC and forge strategic partnerships with event organizers

AI-oriented events and convenings emerged as a major priority from stakeholder interviews across the NYC tech ecosystem. To elevate NYC’s visibility as a premier AI hub, NYCEDC will continue its efforts to attract and partner with leading AI conferences.

NYCEDC has been supporting a number of events to



NYCEDC President & CEO Andrew Kimball speaks with Yann LeCun, Turing Prize-winning professor at NYU and Meta’s chief AI scientist. September 2024.

bring the ecosystem together and raise awareness of NYC’s AI leadership. In late 2023, NYCEDC helped create and launch a new state-of-the-art venue for the tech sector. Civic Hall, located within Zero Irving, is an 85,000-SF facility that operates at the intersection of training, education, and emerging technology with a focus on creating pathways and expanding opportunities for those underserved and underrepresented in the tech sector.

During NY Tech Week in June 2024, NYCEDC supported five different AI-focused events which collectively received nearly 1,500 RSVPs. Events ranged from discussions at the intersection of AI and financial services and AI and digital health, to free coworking space for AI-first startups, and a meetup event for AI practitioners building and working with foundation models. Since opening, Civic Hall has hosted many events that showcase the latest advancements in AI.

NYCEDC has a history of partnering with the AI Summit which offers a world-leading program focused on commercially applied AI. Since 2016, the Summit

has brought thousands of startups, speakers, and the ecosystem together at the Javits Center. In 2023, the AI Summit doubled in attendance and welcomed over 4,000 attendees in 2024.

NYCEDC will look for additional partners to bring AI programming, events, and conferences to NYC to raise the profile of NYC-based firms and practitioners to help attract investment and fuel the continued growth of the tech ecosystem.

Initiative 9:
Deploy the \$40 million NYC Catalyst Fund to include AI

Through the NYC Catalyst Fund, NYCEDC is investing in debt and equity funds that prioritize diverse entrepreneurship, community development, and high-growth emerging sectors including technology and AI. The goal of the program is to make investments that generate financial returns as well as positive, measurable, social and environmental impact. To date, \$17 million has been committed across four funds: Harlem Capital, Maycomb Capital, Metaprop, and

Antler. Collectively, and with capital from the Catalyst Fund, these firms are supporting NYC founders in building iconic and innovative companies, many of which are at the forefront of AI innovations.

Initiative 10:
Position the \$50 million Greenlight Innovation Fund to support AI infrastructure needs

NYCEDC launched a \$50 million+ City Capital RFP to support nonprofits and nonprofit joint ventures that focus on translating innovation into commercialization with a focus on opportunities within advanced technologies, including AI and their applications to life sciences and/or opportunities within the green economy. The fund supports the creation of space; placement of specialized equipment, infrastructure, development of talent, and catalyzation of industry ecosystems; and prioritizes support for diverse entrepreneurs and minority-owned businesses.

Initiative 11:
Support early-stage climate tech companies leveraging new technologies through piloting programs like Pilots at BAT

The Harbor Climate Collaborative is a collaboration between NYCEDC, Brooklyn Navy Yard Development Corporation (BNYDC), and Trust for Governors Island offering a network of incubators and accelerators and dedicated pilot locations to streamline a point-of-entry for NYC-based companies to pilot their climate technology solutions. Collectively, the Harbor Climate Collaborative is activating six million square feet of space for innovation, supporting 5,000 permanent jobs, enabling the education and training of 2,100 students, and generating \$55 billion in economic impact. Pilots at BAT, NYCEDC's pilot program, supports climate companies leveraging technologies, including AI, to test their climate solutions, show viability to customers and investors, and ultimately scale their businesses. The most recent cohort of pilots included two companies leveraging AI: Benchmark Labs provides actionable and more accurate AI-based weather forecasts and ReVert Technologies makes smart power adapters that use AI and utility grid analytics to automate power delivery to plugged-in electronics.

Initiative 12:
Embrace additional AI opportunities across NYCEDC programmatic initiatives

NYCEDC will look for additional ways to embrace AI opportunities across our diverse portfolio of economic development programmatic initiatives. This includes finding ways to embrace AI within the Climate Innovation Hub (CIH) to be developed at the Brooklyn Army Terminal. CIH will accelerate commercialization pathways for climate tech startups and incumbent businesses. NYCEDC's \$100 million investment will catalyze climate tech innovations working to battle against climate challenges and AI will be a critical tool in confronting climate change.

Goal 3:
Develop a diverse AI-ready workforce to power the future of the economy

To ensure New York City remains at the forefront of the AI transformation, we aim to build a workforce that is prepared for the skills needed today and into the future. We will look to partner with important institutions who reach a wide range of New Yorkers to expose them to the necessary tools and knowledge to thrive in an AI-driven economy.

New Programs for 2025:

Initiative 13:
Connect CUNY students with internship opportunities at AI startups

In September 2024, NYCEDC launched a Startup Internship Program RFP to place a minimum of 750 CUNY students over four years into internship roles with early-stage startups commencing with placements in summer 2025. The RFP particularly highlighted opportunities to place students in AI/ML-enabled startups. In addition to internship placements, participants will benefit from mentorship matching and professional development programs and curriculum tailored towards AI/ML. NYCEDC expects 25 percent of first year placements to be housed within NYC-based AI startups.

Initiative 14:
Pilot AI literacy programs across NYC public libraries

As an essential resource for youth and other residents across NYC, NYCEDC seeks to pilot new AI literacy programs for librarians across the New York City public library system. Programs will be a mix of virtual and in-person training sessions on fundamentals of AI; using AI tools safely and responsibly; and additional custom workshops to ensure library staff can support patrons in using AI embedded in library computer labs for homework assistance, career and professional development training, and other programs offered across local branches. NYCEDC will work with OTI to coordinate and boost aligned efforts to support digital equity.

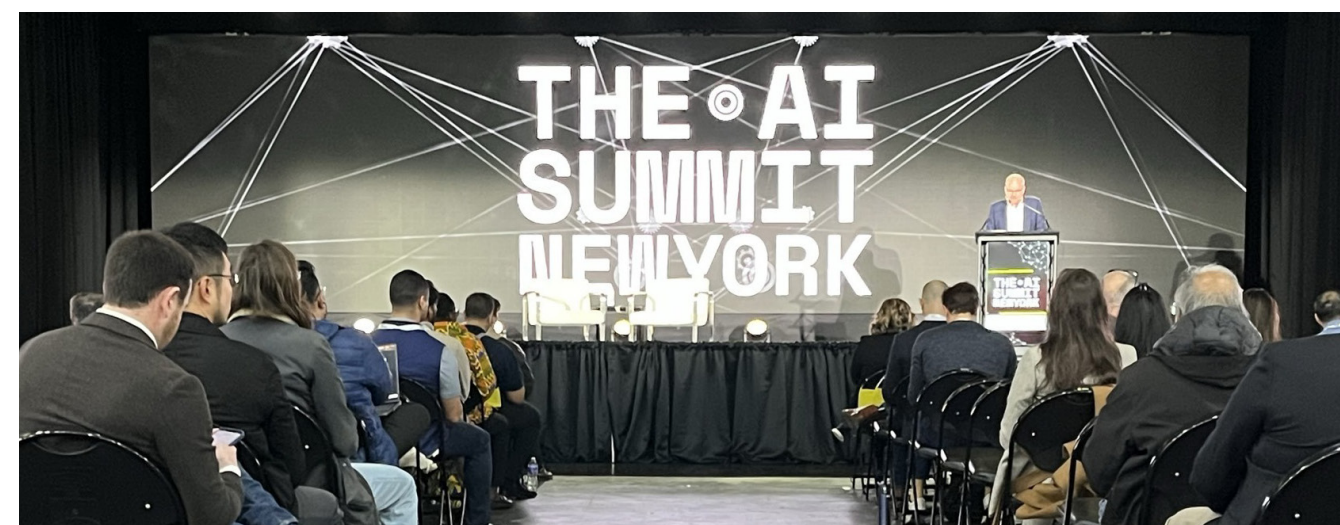
This initiative will follow a train-the-trainer model, equipping librarians with the skills and knowledge to become AI educators and mentors within their communities. By enabling librarians to teach others how to use AI tools effectively, the program amplifies its reach, ensuring that AI literacy extends far beyond the initial participants. This approach empowers local communities by building a self-sustaining ecosystem of AI education and support.

By bringing AI training to libraries and the communities where New Yorkers reside, this initiative leverages existing equipment and infrastructure to lower the

barrier to entry for AI tools, fostering equitable access to technology across the city and supports creating the libraries of the future.

Initiative 15:
Scale programs supporting foundational awareness of Generative AI

The Mayor's Office of Talent and Workforce Development (NYC Talent) was tasked in Mayor Adams's Executive Order 22 with establishing a Workforce Development Board composed of leaders from the business community, educational institutions, unions, and training providers who will help develop and sustain strategies that will aid New Yorkers in finding family-sustaining careers and help employers tap the talent they need to succeed. With support from the Board and in partnership with both CUNY leadership and the New York Jobs CEO Council, a new 10-hour learning opportunity, "Demystifying Generative AI" has been created for a target audience of CUNY students studying in fields other than STEM and computer science. Offered to up to 85 CUNY undergrad students, the pilot series created an accessible forum for a series of lectures and discussions around the origins, uses, and capabilities of generative AI. Designed for students new to generative AI, sessions were led by New York employers to help demystify generative AI, offer foundational awareness for its uses, and provided



NYCEDC President & CEO speaking at AI Summit New York, December 2024



NYCEDC Chief Strategy Officer Cecilia Kushner speaks on a panel at the AI Hot 100 Conference. September 2024.

opportunities to put learnings into practice through workshop sessions. Covered topics included the history of artificial intelligence, key concepts of the technology, techniques for creating effective prompts, and generative AI in the workplace.

Based upon learnings from executing this pilot, NYCEDC seeks to partner to find ways to scale the program to additional communities, including potentially train-the-trainer programs, additional CUNY audiences, high school and youth, older adults, and other New Yorkers who may remain skeptical about AI.

Programs Already Underway:

Initiative 16:

Leverage Civic Hall as the go-to hub for AI training, exposure, and events

NYCEDC will partner with Civic Hall to create opportunities to convene leaders and faculty and staff

for trainings, workshops, and workforce development opportunities to support education and convenings across the AI ecosystem. NYCEDC will convene partners including CUNY, NYC Public Schools, private industry, and others at Civic Hall to support curriculum development to build industry-informed AI career pathways and increase AI exposure and training for faculty and staff.

Civic Hall's existing role as an innovation accelerator can further strengthen NYC's AI ecosystem. By facilitating collaboration among civic tech organizations, workforce providers, and government agencies, Civic Hall can create meaningful impact and expand opportunities for New Yorkers. NYCEDC will continue to serve as a strategic partner to Civic Hall with other stakeholders to align offerings with broader initiatives, making it a trusted hub for education, innovation, and community engagement in AI.

Initiative 17:

Support women looking to transition into tech and AI with mentorship and digital office hours with industry experts

Women.NYC aims to introduce women to the opportunities for employment and business creation offered by booming sectors like AI. The Women.NYC Network offers Digital Office Hours creating opportunities for participants to meet one on one with industry experts. The program includes mentors who work within AI. Women.NYC events have also provided exposure and skill-building in AI. A four-hour workshop on AI tools for small businesses was held in 2024 and new programs and events will be stood up that focus on exposure to careers in AI, data science, and technology.

Initiative 18:

Launch AI Policy Lab to support AI learning across NYC Public Schools

NYC Public Schools launched a K12 AI Policy Lab in September 2023 to explore GenAI's benefits and risks with national experts. Collaborative working groups are developing guidelines for responsible AI use in education, actively integrating student perspectives. As the largest and most-diverse school district, NYC aims to share best practices focusing on safety, data security, privacy, and equitable access to high-quality, technology-enabled learning experiences.



Exposition hall at the AI Summit in New York City. December 2024.

NYCEDC-AI Collaboration |

NYCEDC will work together with our public sector colleagues and elected officials, private industry and startups, academia and workforce development organizations as well as nonprofits to find ways to partner to address opportunities to leverage AI and ensure the greatest and most equitable adoption of artificial intelligence. We will also work to ensure New Yorkers are being exposed to and upskilled into AI tools and skills that will be needed in the growing economy.

For New Yorkers Who Want to Gain AI Skills

There are many opportunities, resources, and programs in NYC to help you learn and prepare for utilizing generative AI tools for both the workforce and for personal uses. There are many free tools available to start to integrate AI into your everyday life, from utilizing ChatGPT to collaborating with Gemini in your Gmail account to draft emails, summarize email threads, and more.

The workforce providers highlighted within the report are a great starting point to learn about various opportunities to gain AI technical skills, from certificate programs, self-paced learning opportunities, to course work and bootcamp programs.

Additionally, there are dozens of events hosted weekly across NYC for New Yorkers to learn more about AI, from social networking events to technical demonstrations and everything in between. Meetup.com is a great place to start to find events catered to your interests. Civic Hall at Union Square is a hub for these types of programs and events. NY Tech Meetup has been a monthly staple for the NYC tech ecosystem since 2004 and is housed at Civic Hall. Other leading AI meetups and conferences include the AI Summit, AI Tinkerers, AI Furnace, All Tech is Human, Data Driven NYC, Generative NYC and more.

For Entrepreneurs, Innovation Players, Investors, Startups and Industry

The market opportunity for AI startups in New York City is vast. New York is already a leader in startup formation and coupled with the number of industries located here, there is unlimited potential for new startups to be formed addressing unique use cases and challenges.

NYCEDC runs a number of programs to support the growth and success of entrepreneurs in NYC, including the Founder Fellowship program which runs annual



cohorts of accelerator programs for underrepresented NYC-based tech founders. Additionally, NYC has over 100 incubators and accelerators, many of which are supporting AI-founders. Find a list of incubators and accelerators across NYC at edc.nyc/nyc-tech-working-spaces.

For Workforce Development, Academia, Community Groups, and Nonprofits

The efforts of workforce development and academic stakeholders will be critical for ensuring an inclusive and representative AI ecosystem here in NYC. Collectively, we will work to create pathways for New Yorkers to upskill and gain valuable experiences and skills to support new ways of work leveraging AI tools.

NYCEDC is taking action to accelerate the growth and adoption of AI across NYC's economy. Working to ensure we're the most resilient economy will require ongoing public-private partnership. To stay up to date on current and upcoming opportunities in the tech sector:

- Sign up for [NYCEDC's Emerging Tech newsletter](#)
- Subscribe to [NYCEDC's RFP list](#)

Appendix A: Glossary of Key Terms

- **Algorithm:** A set of instructions that can be programmed and followed by a computer. Computer algorithms can range in complexity, from sending an email if a condition is true, to counting pedestrians in images or videos.^{xlii}
- **Applied AI:** The creation and adoption of artificial intelligence (AI) solutions to address real-world problems and improve business outcomes.
- **Artificial Intelligence (AI):** A machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. Artificial intelligence systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action.^{xliii}
- **Automation:** Independent machine-managed choreography of the operation of one or more digital systems.^{xliv}
- **Chip:** A phrase commonly used to refer to an integrated circuit or semiconductor chip. Chips are pieces of silicon that contain electronic circuits and serve as the foundation for most modern electronics.^{xlv}
- **Computer Vision:** The digital process of perceiving and learning visual tasks in order to interpret and understand the world through cameras and sensors, including Optical Character Recognition (OCR), the identification of objects in images and videos, and more.^{xlvi}
- **CPU:** Abbreviation for central processing unit, the primary functional component of a computer. The CPU is an assemblage of electronic circuitry that run a computer's operating system and apps and manage a variety of other computer operations.^{xlvii}
- **Deep Learning:** A type of machine learning that uses artificial neural networks to enable digital systems to learn and make decisions based on unstructured, unlabeled data.^{xlviii}
- **Enterprise AI:** Refers to the large-scale deployment of AI across an entire organization, aimed at optimizing departments, function or corporate wide processes.
- **Generative AI:** Any AI system whose primary function is to generate content, which can take the form of code, text, images, and more.^{xlix}
- **GPU:** Abbreviation for graphics processing unit, a specialized processor originally designed to accelerate graphics rendering. GPUs can process many pieces of data simultaneously, making them useful for machine learning, video editing, and gaming applications.ⁱ
- **Hallucinations:** AI hallucinations are incorrect or misleading results that AI models generate. These errors can be caused by a variety of factors, including insufficient training data, incorrect assumptions made by the model, or biases in the data used to train the model.ⁱⁱ
- **Large Language Models (LLMs):** A deep learning algorithm that can perform a variety of natural language processing (NLP) tasks. Large language models use transformer models and are trained using massive datasets. This enables them to recognize, translate, predict, or generate text or other content.ⁱⁱⁱ
- **Machine Learning (ML):** The study of computer algorithms that improve automatically through data, a subcategory of artificial intelligence. These algorithms differ from rules-based programming as they build a model based on training data to complete a task with minimal human intervention.ⁱⁱⁱⁱ
- **Natural Language Processing (NLP):** The ability of a machine to process, analyze, and mimic human language, either spoken or written.^{lv}
- **Neural Network:** A method in AI that teaches computers to process data in a way that is inspired by the human brain.^{lv}
- **Predictive Model:** A model used for forecasting outcomes based on anticipated future values of input variables.^{lvi}
- **Semiconductors:** A material that can be altered to conduct electrical current or block its passage, such as silicon. Given the use of semiconductors in computer chips, the two terms are often used interchangeably.^{lvii}

Appendix B: Subset of NYC-based Nonprofits and Think Tanks

- **AI Now Institute:** Founded in 2017, the AI Now Institute produces diagnosis and policy research on artificial intelligence. They develop policy strategies to redirect away from the current trajectory: unbridled commercial surveillance, consolidation of power in very few companies, and a lack of public accountability.
- **AI for the People:** Born out of the idea of shaping AI technology around human and societal needs, [AI for the People's](#) mission is to learn, pose questions, and take initiative on how AI can be used for social good.
- **All Tech Is Human:** [All Tech Is Human](#) brings together people, organizations, and ideas to grow and strengthen the Responsible Tech ecosystem.
- **BetaNYC:** A civic organization dedicated to improving lives in New York through civic design, technology, and data. With a focus on municipal open data, [BetaNYC](#) works to support under-resourced organizations with the data to address pressing research questions, advocate for policy change, and solve problems through technology.
- **Center for Responsible AI at New York University:** Building a future in which responsible AI is synonymous with AI with a focus on interdisciplinary research, technology policy, and education and training for AI practitioners, decision makers, and the public at large.
- **DataKind (NYC HQ):** A global organization that tackles the world's toughest challenges with data science and AI to improve the capabilities, reach, and scale of social impact organizations.
- **Data & Society (NYC HQ):** Studies the social implications of data-centric technologies, automation, and AI.
- **Encode Justice:** The world's first and largest youth movement for human-centered AI. Powered by 1,000 young people across every inhabited continent who believe AI must be steered in a direction that benefits society.

Appendix C: Methodology for Classification of Instructional Programs (CIP) Analysis

The National Center for Education Statistics (NCES), part of the US Department of Education's Institute of Education Sciences (IES), is "the primary federal entity for collecting and analyzing data related to education."^{lviii} NCES first developed the Classification of Instructional Programs (CIP) taxonomy in 1980 for "the accurate tracking and reporting of fields of study and program completions activity."^{lix} Revisions were made to the CIP taxonomy in 1985, 1990, 2000, 2010, and 2020.

To quantify the number of "AI-related" graduates from higher education institutions in New York City, the New York Metro Area, and other major metropolitan areas across the United States, the following assumptions were made:

- 1) "AI-related," in this context, would refer to technical instructional programs;
- 2) The CIP taxonomy would provide imperfect but reasonable and comparable data given that:
 - a. The latest revisions to the CIP taxonomy occurred in 2020,
 - b. This latest wave of AI advancement and adoption began in November/December 2022, and
 - c. Instructional program design and approvals can be lengthy processes within higher education; and
- 3) While graduates of technical instructional programs may pursue a wide variety of occupations, both technical and non-technical, there is a stronger probability that AI/ML engineers will have completed technical instructional programs versus non-technical instructional programs.

To determine which instructional programs, and therefore which CIP codes, to analyze, NYCEDC reviewed NCES details for all two-digit CIP codes, categorizing them as either "More Technical" or "Less Technical" based on values such as their "Title," "Definition," "Illustrative Examples," and the four- and/or six-digit CIP codes they hierarchically contained.

Then, for each two-digit CIP code categorized as "More Technical" [ex: "11) Computer and Information Sciences and Support Services"], NYCEDC reviewed each four-digit CIP code underneath it [ex: "11.01) Computer and Information Sciences, General"] and assigned "AI relevance scores" of "High," "High/Medium," "Medium," "Medium/Low," and "Low." Similar to our categorization of two-digit CIP codes, the assignment of these "AI relevance scores" for each four-digit CIP code was based on values such as their "Title," "Definition," "Illustrative Examples," and the six-digit CIP codes they hierarchically contained.

Our methodology and list of "AI-related CIP codes" was vetted with a leading higher education academic and administrator, whose qualifications include twenty years teaching computer science, oversight of the development and selection of faculty and departmental grant awards focused on curriculum innovation, and participation on national and regional accreditation boards.

Appendix D: NYC-Based Bootcamps and Certificate Programs with AI Integrations

Based on their feedback, we took a stricter approach with our assignment of “AI relevance scores” and arrived at the following list of twenty-six (26) four-digit CIP codes—instructional programs that we believe are most likely to prepare students for technical, AI-related occupations:

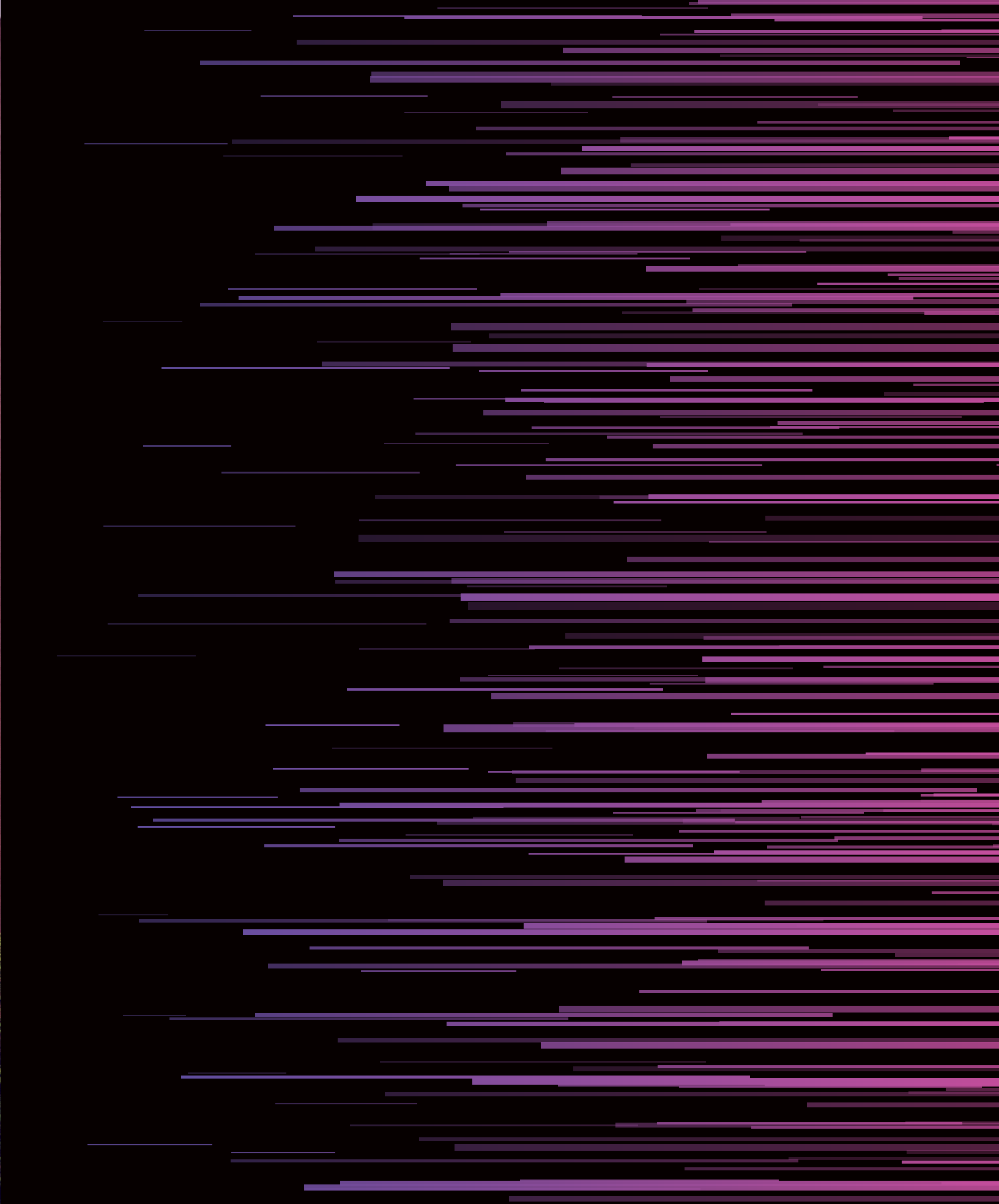
- 11.01) Computer and Information Sciences, General
- 11.02) Computer Programming
- 11.07) Computer Science
- 11.08) Computer Software and Media Applications
- 14.09) Computer Engineering
- 14.42) Mechatronics, Robotics, and Automation Engineering
- 14.47) Electrical and Computer Engineering
- 15.04) Electromechanical Technologies/Technicians
- 15.12) Computer Engineering Technologies/Technicians
- 26.11) Biomathematics, Bioinformatics, and Computational Biology
- 26.15) Neurobiology and Neurosciences
- 27.01) Mathematics
- 27.03) Applied Mathematics
- 27.05) Statistics
- 27.06) Applied Statistics
- 27.99) Mathematics and Statistics, Other
- 29.03) Military Applied Sciences
- 30.08) Mathematics and Computer Science
- 30.16) Accounting and Computer Science
- 30.25) Cognitive Science
- 30.30) Computational Science
- 30.31) Human Computer Interaction
- 30.39) Economics and Computer Science
- 30.48) Linguistics and Computer Science
- 30.70) Data Science
- 30.71) Data Analytics

Program completion data was pulled for 2018-2023 for these twenty-six (26) four-digit CIP codes as reported to the NCES Integrated Postsecondary Education Data System (IPEDS).

Program	AI-Specific Programs	Other Programs Incorporating AI/ML
App Academy	• None	• Software Engineering
Borough of Manhattan Community College (BMCC)	• AI Machine Learning	
BrainStation	• Data Science	• UX Design • Software Engineering
Codesmith	• None	• Software Engineering Immersive
Columbia University	• Machine Learning and AI MicroBootCamp™ (online) • AI Executive Certificate (online)	• N/A
DataCamp	• Data Analyst Certificate • Data Scientist Certificate • Data Engineer Certificate • SQL Associate Certificate • Power BI Certificate • Tableau Certificate	
Flatiron School	• Data Science	• Software Engineering
Fullstack Academy	• AI & Machine Learning (online)	• Further investigation required
Galvanize	• None	• Beginner & Intermediate Coding Bootcamps
General Assembly	• Data Science Immersive	
Metis	• Data Science	
Noble Desktop	• Data Science Certificate • Python ML Bootcamp	• FinTech Bootcamp • Data Analytics Certificate • Python for Data Science Bootcamp
NPower	• None	• Full Stack Development
NYC Data Science Academy	• Data Science with Machine Learning	• Data Analytics Bootcamp • Various Data Science Professional Development Courses
Per Scholas	• None	• Software Engineering
Pursuit	• None	• Software Development

Appendix E: Endnotes

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