

U.S. Department of Labor Industry-Driven Strategies Case Study

Accelerating AI Talent in Miami: Industry Partnerships Driving
an AI Ready Workforce



Overview

The U.S. Department of Labor, Employment and Training Administration's (ETA) [Industry-Driven Strategies Framework](#) is intended to advance knowledge and support the development, scaling, and sustainability of industry-driven strategies. It provides workforce system practitioners with a clear picture of the concepts and elements essential to successful implementation of industry-driven strategies. This case study is an example of this work in action.

Introduction

Miami, Florida, is rapidly emerging as a tech hub and a **national leader in artificial intelligence (AI) talent development**. A unified vision and **collaborative, cross-sector partnerships** are driving innovative workforce programs in the region. Key initiatives include Miami Dade College's new Applied AI degree program and related AI Centers, the nonprofit Miami EdTech's AI Registered Apprenticeship Program, and a suite of K–12 AI learning and outreach efforts—all **co-designed with industry input**. Together, these efforts show how employers, educators, and public agencies in South Florida have aligned under a shared plan to build an AI-ready workforce.

Background: Aligning AI Education with Industry Demand

The use of AI technology is expanding rapidly. In 2024, U.S. private investment in AI was more than [\\$109 billion](#) and [78% of organizations reported using AI](#) in the workplace; in 2025, [40% of U.S. employees](#) say they use AI in their role at least a few times per year. Miami is one example of an expanding tech and AI talent ecosystem. The region now ranks among the [top U.S. metro areas](#) for venture capital investment and tech job growth. South Florida's tech sector grew by nearly 30% from 2020 to 2023, adding [more than 66,000 new tech jobs](#) over that period. This growth in tech jobs is accelerating demand for AI talent, combined with other sectors recognizing a need for workers with AI skillsets tailored to their industries. Local leaders in Miami recognized both the chance to elevate homegrown talent into these emerging roles and the risk of a skills gap if companies had to import talent—challenges that are now being addressed through initiatives connecting Miami's programs to a broader national push to develop an AI-ready workforce.

In 2019, Miami Dade College (MDC) began planning how to equip local workers with AI skills. At that time, AI education was mostly confined to graduate programs; there were no broadly available AI programs in the region that focused on applied AI skills. With support from a National Science Foundation grant and local public funding, **MDC launched an Applied Artificial Intelligence program and opened two AI Centers** (which house MDC's AI certificate and degree programs, feature computing classrooms and meeting spaces, and host training programs and

events for the community) in 2022 and 2023, becoming one of the first community college-led AI initiatives in the country. In late 2023, **Miami EdTech debuted a registered apprenticeship in AI** to provide a fast-track, work-based entry into AI careers. These moves proved timely, coming just as breakthroughs in generative AI such as ChatGPT vaulted AI into mainstream awareness. Additionally, the community response has been strong. **Enrollment in MDC's AI courses quickly exceeded expectations**, with over 750 students enrolled in the first year and more than 2,000 by the second year. Miami EdTech's apprenticeship pipeline is similarly growing, with **additional apprentices and employer hosts** coming on board in the next year.

Partnership Framework: Collaboration Underpins Success

Miami's AI workforce success is anchored by a **unified vision shared across the city's tech ecosystem**—spanning education, industry, government, and philanthropy. From the outset, visionary leadership and alignment set the tone. At MDC, the president and academic leadership empowered a dedicated Vice President of Innovation and Technology Partnerships to drive industry collaboration. Meanwhile, city and county officials deliberately embedded the AI talent initiative into Miami's broader economic development strategy. This top-level alignment enabled quick, collaborative decision-making, supported by flexibility—such as fast-tracking course approvals and adopting non-traditional program

Unified Vision

"At that time, no one was talking about AI the way that it is today. There were no programs in AI—just universities offering PhD and masters [degrees]. We saw an opportunity to build something applied and skills based."

—Antonio Delgado, VP of Innovation and Technology Partnerships, Miami Dade College

Alignment

"We started in 2018–19 with the belief that AI would be part of every job, not just specialized AI roles. So, the question was how to get everyone ready, not only the experts."

—Anshul Sonak, Senior Director at Intel

structures—to meet urgent industry needs. Regular partner meetings, advisory boards, and informal feedback loops aided in maintaining transparency, momentum, and shared ownership of results. With this leadership foundation in place, each stakeholder contributed distinct strengths to a coordinated, high-impact effort.

Industry Partners: Co-Designers

A hallmark of MDC's AI programs is deep and sustained industry involvement in program design and delivery. From the outset, MDC partnered with national technology companies and local employers applying AI across industries such as finance and healthcare to co-design a

curriculum rooted in practical, workforce-ready skills. Rather than merely soliciting input, MDC invited these partners to **co-create and co-lead** its AI initiative, embedding real-world expertise directly into program content and delivery.

Industry partners invested a significant amount of time and resources to support MDC's AI programs. Intel contributed **over 1,000 hours of curriculum content**, faculty training, and mentorship through its "AI for Workforce" initiative. Microsoft supported curriculum development, funded wraparound services through nonprofit partners, and awarded nearly **\$500,000 in student scholarships**. Engineers from Microsoft and Google helped identify which programming languages and AI tools students should learn. Amazon Web Services and IBM provided certifications, digital badges, and frameworks for real-world projects. These hands-on contributions ensured that the program was closely aligned with industry needs while equipping students with the skills and support necessary for AI careers.

To maintain ongoing alignment with industry demands, MDC convened a **Business Industry Leadership Team (BILT)** composed of experts from national companies, local employers, and startups. The BILT met regularly to review and refine the draft curriculum, ensuring that course materials and program entry requirements stayed relevant and accessible. Regular meetings were essential: as AI technologies and required skill sets evolve rapidly, continuous industry engagement kept the program responsive to changing workforce needs. This high level of involvement allowed employers to actively co-own the AI talent pipeline, rather than passively waiting to hire graduates. MDC's **industry co-leadership model** proved crucial in producing a curriculum tailored to market demands and in cementing employer commitment to hiring locally trained talent.

Industry Engagement

"The partnership was incredibly collaborative... [The MDC] team always brought ideas to us. It was about removing silos and sharing ownership."

*—Lucas Hernández, Microsoft
Philanthropies Regional Director*

Public Sector and Philanthropy: Champions

Local government and foundations recognized the potential economic impact of AI workforce development, and these institutions provided critical funding and policy support to launch and scale the initiative. In 2021–2022, Miami-Dade County and the City of Miami invested \$7 million to establish MDC's AI Centers, develop curriculum, and fund scholarships; this public investment was matched by a \$7 million grant from the John S. and James L. Knight Foundation. Combined with funding from the Miami Downtown Development Authority and a National Science Foundation (NSF) award for AI education research, MDC received \$16 million to equip state-of-the-art AI labs and ensure programs could be offered at low or no cost to students.

Education Stakeholders: Curriculum Integrators

MDC and Miami EdTech each played a key role in bridging the gap between education and industry, working in close partnership with Miami-Dade County Public Schools. MDC extended AI learning into the K–12 system through dual enrollment courses, while Miami EdTech ran an AI pre-apprenticeship program in high schools and supported postsecondary apprenticeships. Together with the school district, these partners strategically integrated AI programming into the K–12 curriculum, creating structured pathways from high school courses to apprenticeships to college degrees that directly align with employer needs.

Training Strategy and Innovation: Flexible Pathways to AI Careers

Miami’s AI workforce initiative features a **multi-layered training strategy** catering to different time frames and learner needs—from immediate skill bootcamps to long-term degrees—all interconnected by industry-informed curricula. This approach provides **multiple entry points into AI careers**:

1. **Stackable Credentials:** MDC developed a suite of applied AI programs that allow learners to build skills in stages and “stack” them into higher credentials. Students can start with a **College Credit Certificate in Artificial Intelligence Awareness**, a short three-course sequence covering AI fundamentals, ethics, and basic programming. They can then continue to earn an **Advanced AI Practitioner Certificate** with a few more courses, such as machine learning and data visualization. Both certificates fully count toward MDC’s new two-year **Associate of Science in Applied AI**, which can further extend to a **Bachelor of Science in Applied AI**.

All of MDC’s certificate and degree programs were co-designed with employers to focus on **practical, job-relevant skills** rather than theory. For example, traditional advanced math prerequisites were replaced with applied math content specific to AI use cases, opening the door to more students without sacrificing needed quantitative skills. Courses emphasize **hands-on projects** and real-world problem solving; local companies often sponsor capstone projects, giving students experience building AI solutions for actual business or community challenges. Additionally, MDC’s AI Centers serve as hubs where technology leaders, industry experts, and students can collaborate and learn about AI, providing additional opportunities for real-world engagement and networking. This **laddered, flexible design** lets a working adult take just a few courses for a quick skill boost, or a new student proceed through to a four-year degree. MDC’s Applied AI program also intersects opportunities for employer connection with multiple exit points along the degree trajectory to accommodate varying life and work circumstances

2. **Work-Based Learning and Apprenticeship:** To connect classroom learning with on-the-job experience, Miami stakeholders introduced **registered apprenticeships** in AI. One innovative model in the region is run by **Miami EdTech** as a U.S. Department of Labor Registered Apprenticeship Program. In this one-year program, participants—often recent grads or career changers—undergo intensive upfront training in AI and data analytics, leveraging curricula like Google’s AI professional certificates that are aligned with MDC’s courses. Apprentices earn a paycheck from day one and often obtain industry certifications during the program, such as Microsoft’s Azure AI Fundamentals. Early results are promising—the first apprentice completed the program in 2024 and moved into a full-time AI role, and Miami EdTech’s apprenticeship pipeline continues to grow.
3. **Early Exposure and K–12 Pipeline:** Recognizing that the talent pipeline begins well before college, Miami’s strategy includes wide-ranging **K–12 outreach** to spark interest and build foundational skills in AI. For example, MDC partnered with the **Mark Cuban Foundation** to host free AI Bootcamps for high school students. These short camps introduce teens to AI in an accessible way, using fun projects like training a simple AI model to recognize images or exploring how chatbots work. Hundreds of local high schoolers have participated so far. Additionally, with support from a **\$2 million NSF grant**, MDC and Miami-Dade County Public Schools trained dozens of high school teachers to incorporate AI concepts into their classes. Teachers attended workshops to learn AI basics and received lesson plans and toolkits to infuse AI topics into math, science, and computer science curricula. Miami is also offering **AI dual enrollment** opportunities for high school students—students can take introductory AI college courses through MDC while still in high school, earning college credit and experiencing college-level instruction in AI.

On a pilot basis, **six public high schools**—working in partnership with Miami EdTech and the Miami-Dade Public Schools Career and Technical Education department—have launched an **AI pre-apprenticeship** program. In this program, students from 10th grade onward take a series of four AI and data courses (approved as part of the state’s career and technical education curriculum) that prepare them for direct entry into the Miami EdTech apprenticeship or further study at MDC upon graduation. These K–12 efforts ensure that awareness of AI careers reaches Miami’s youth early, and they create a steady pipeline of interested, prepared students feeding into the college and apprenticeship programs.

Miami’s overall AI education and training approach is **comprehensive and interconnected**. An individual can enter at any stage—as a high school student, a community college student, or an adult learner—and find a pathway to grow into an AI career. Each pathway is **industry-**

informed and emphasizes hands-on learning, so that regardless of where someone starts, they acquire real skills that employers value.

Next Steps: Scaling Up and Sustaining Momentum

Miami's AI workforce initiative is now moving from its launch phase into full scale-up, with a focus on expanding reach and maintaining momentum. Key next steps include:

- **Expanding Program Capacity:** MDC is scaling up its AI programs by hiring additional instructors, offering more course sections, and continually updating the curriculum with the latest AI advancements such as emerging generative and agentic AI tools. Miami EdTech is similarly increasing apprenticeship enrollment and recruiting more employer partners to host apprentices. These efforts will broaden opportunities for participants while meeting the growing employer demand for AI-proficient talent.
- **National Outreach and Leadership:** MDC is also taking a lead in shaping AI workforce development beyond South Florida. MDC spearheads the **National Applied AI Consortium**, with support from industry partners like Intel and funding from the NSF, to share AI curriculum and training models with colleges nationwide. In its first year, over **1,000 faculty members** from across the U.S. were trained in applied AI teaching through MDC-led workshops. By actively sharing best practices and collaborating with other institutions, Miami's leaders aim to replicate their success elsewhere. This knowledge transfer not only elevates Miami's profile as a national leader in AI education but also brings in new insights to further improve its local programs.

By taking these steps, Miami is reinforcing the foundation established during the initiative's launch and preparing for long-term sustainability. Ongoing collaboration between education, industry, government, and community partners remains essential. The coalition's continued commitment to a shared vision, combined with adaptability as technology evolves, positions Miami as a **replicable model for industry-driven AI workforce development**. In the coming years, Miami's experience will offer valuable lessons for other regions looking to build their own AI-ready talent pipelines.



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