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A catalyst for diversity

Inspiring STEM learning
and careers with AI

By Deloitte AI Institute

About the Deloitte AI Institute

The Deloitte AI Institute helps organizations connect all the different dimensions of the robust, highly dynamic and rapidly evolving AI ecosystem. The AI Institute leads conversations on applied AI innovation across industries, with cutting-edge insights, to promote human-machine collaboration in the “Age of With”.


Deloitte AI Institute aims to promote the dialogue and development of artificial intelligence, stimulate innovation, and examine challenges to AI implementation and ways to address them. The AI Institute collaborates with an ecosystem composed of academic research groups, start-ups, entrepreneurs, innovators, mature AI product leaders, and AI visionaries, to explore key areas of artificial intelligence including risks, policies, ethics, future of work and talent, and applied AI use cases. Combined with Deloitte’s deep knowledge and experience in artificial intelligence applications, the Institute helps make sense of this complex ecosystem, and as a result, deliver impactful perspectives to help organizations succeed by making informed AI decisions.

No matter what stage of the AI journey you’re in; whether you’re a board member or a C-Suite leader driving strategy for your organization, or a hands on data scientist, bringing an AI strategy to life, the Deloitte AI institute can help you learn more about how enterprises across the world are leveraging AI for a competitive advantage. Visit us at the Deloitte AI Institute for a full body of our work, subscribe to our podcasts and newsletter, and join us at our meet ups and live events. Let’s explore the future of AI together.

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Starting young and instilling interest in STEM

The effort to funnel more bright minds into STEM-focused higher education begins in K-12 learning. Research reveals that a predictor of a student majoring in a STEM subject in college is whether they form an intention to do so while in high school. What is more, STEM-related curricular and extracurricular experiences increase STEM interest and in turn raise the likelihood a student will pursue a STEM major in college.

A challenge, however, is making science and math subjects compelling. AI, robotics, analytics, and related subjects can be a gateway to student interest. Consider the educational and professional trajectory of Danielle Bryan, a Deloitte consultant of Deloitte Consulting LLP now with nearly five years of professional experience after a STEM-focused education.

Bryan attended an Architecture, Construction and Engineering (A.C.E.) high school in Washington, DC. The school provides preparatory and vocational education with a focus on STEM and technology subjects, and one of its stated core beliefs is that “all students deserve a challenging and broad education, regardless of ethnicity or economic status.” In addition to regular classes, extracurricular activities give students opportunities to explore their interests in technology, such as with the Electric Vehicle or Robotics clubs or through visits and discussions with industry professionals.



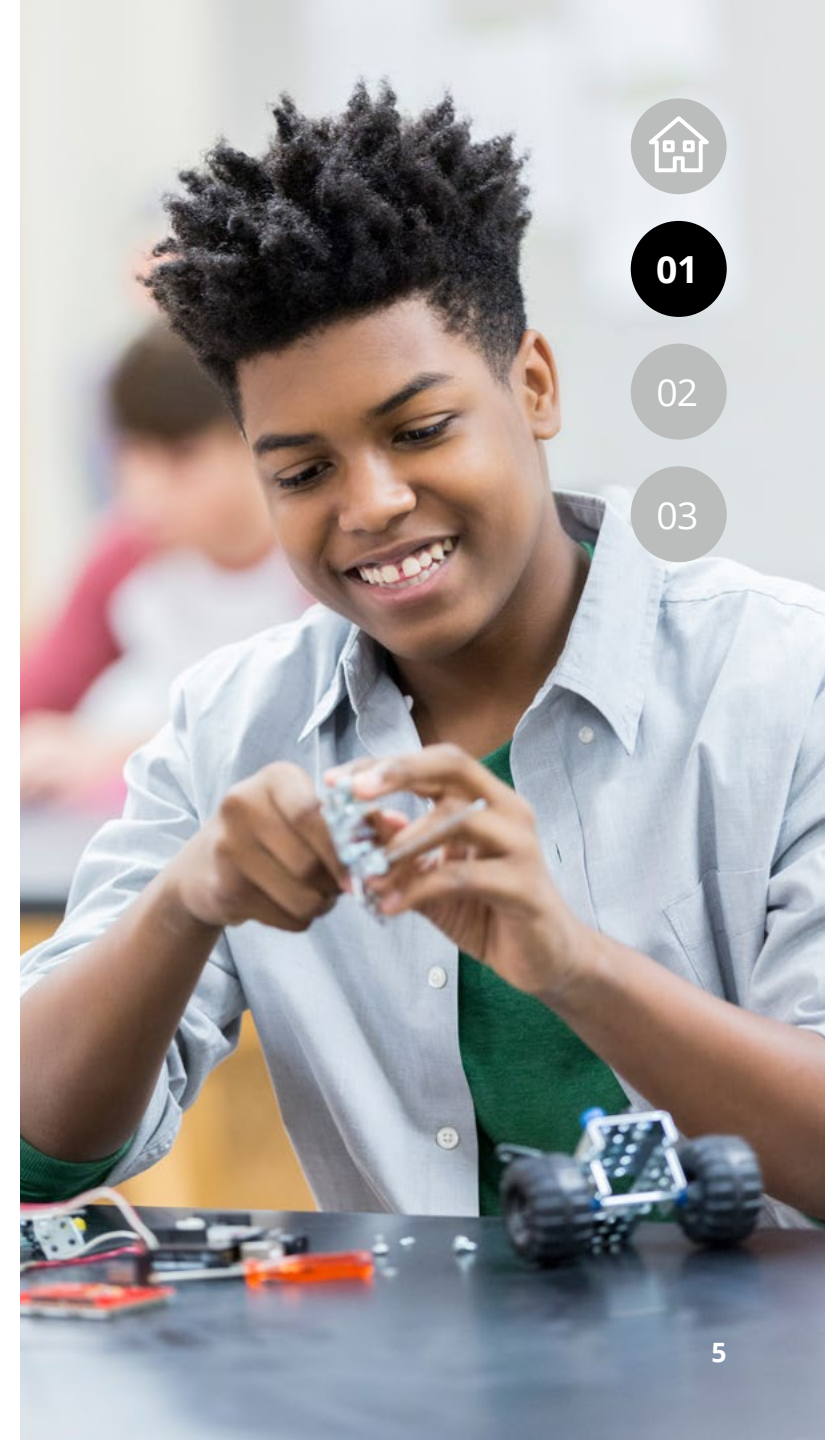
Starting young and instilling interest in STEM

“It was seeing these things in the context of the real world that sparked a passion and interest,” said Bryan. “People came in to talk about careers and salary and that translated to something I could see myself doing. A lot of that had to do with different programs like site visits for engineering projects. And the curriculum was about innovation and how to make things better and improve it.”

Bryan noted that a factor to consider in K-12 education is that when students hear about AI, machine learning, cybersecurity, or software engineering, they hear, “It’s hard.” Indeed, these subjects can be opaque and perhaps intimidating for people of any age and from any background. A key is to make the topics relatable to the students’ environment outside of school, such as using AI to address chronic economic disparities

and resource inequity. They can connect the things learned in the classroom, the activities where those lessons have real world applicability, and their vision for AI and STEM fields as a career path and an avenue for addressing challenges in their communities.

While the ROI will not come immediately, in time, this outreach may yield more students entering college in pursuit of STEM degrees. One example of this type of an endeavor is an effort between Deloitte and the United Way to reach middle school students in the Virginia and Washington DC areas. Sponsored by the Deloitte AI Institute for Government, Deloitte developed a 12-week program to expose students to AI and related subjects with hands-on activities and instruction from professionals who develop and work with AI.



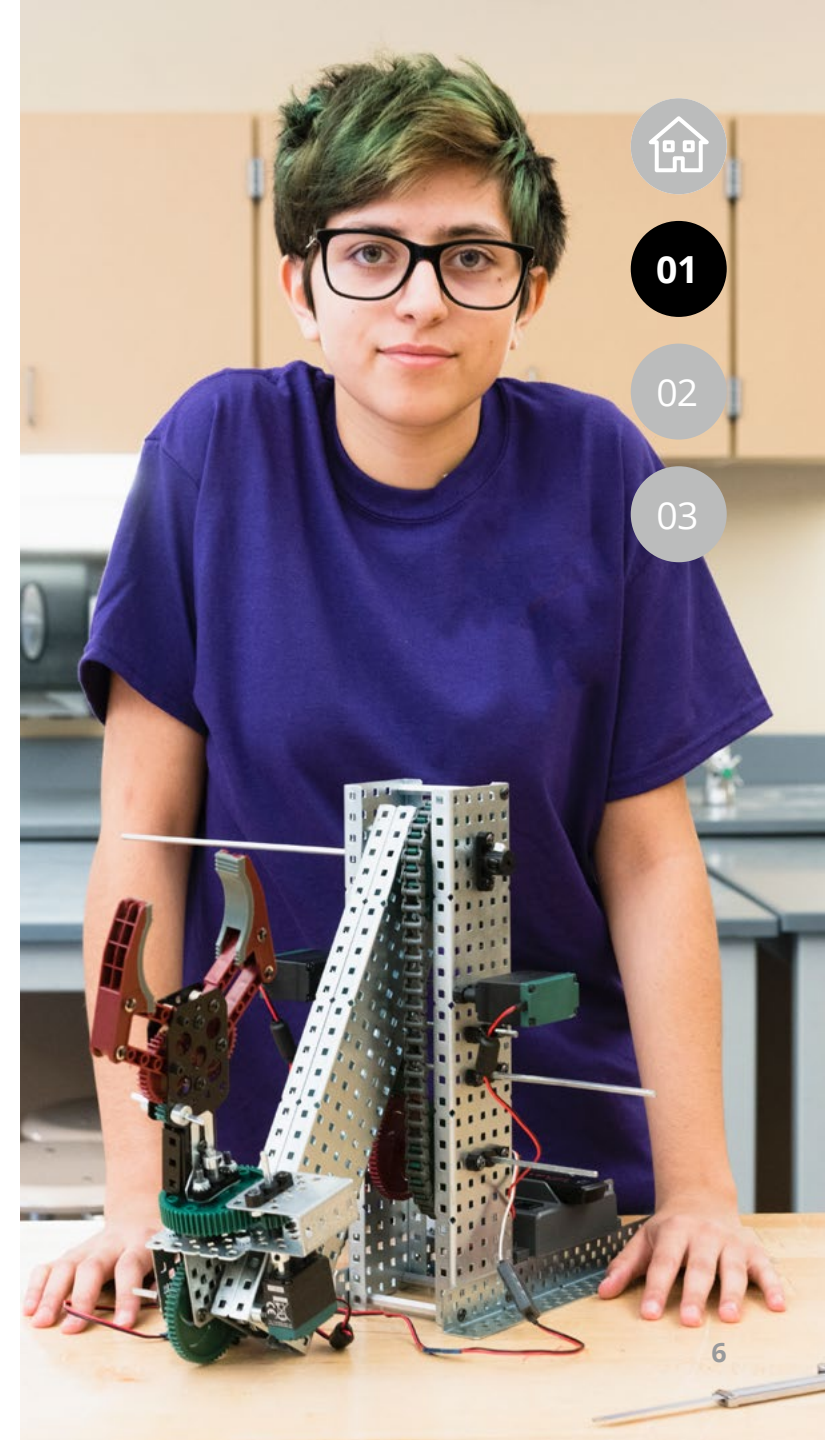
Starting young and instilling interest in STEM

Nedelka Phillips, senior vice president of marketing and fundraising at United Way of the National Capital Area, said organizations looking to make investments in education should understand the precise challenges specific to the local community.

“When we think about education gaps that exist, we typically see they are Black and brown communities, disproportionately,” she said. “We know that when it comes to technology, there is a huge issue around not just limited Internet access but also the devices themselves. And layered on top of that is food and meals, also access to health care.”

Consider the challenge of exciting a young person with STEM subjects when the student is hungry for want of basic nutrition. Enterprises seeking to make an enduring difference in students’ lives should look to the data on community challenges, collaborate with local organizations that deeply understand the community’s needs in a holistic way, and then commit to a long-term initiative that does not end with high school graduation.

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Creating opportunities for higher education students

In colleges and universities, the challenge for encouraging STEM majors is somewhat different. Particularly in AI and analytics, advances and innovations occur at such a rapid pace that schools can be challenged to keep the curriculum relevant and up to date. In fostering diversity and inclusion, an area for focus could be working with historically black colleges and universities (HBCUs) to provide opportunities for real world learning experiences.

“In the past, companies have had a specific recruiting agenda,” said Claton Lewis, director of student success and recruitment at Morgan State University, an HBCU. “[Businesses] come in and pay for and fund to be part of career fairs and career-related events on campus. But when we’re talking about genuinely moving the needle in terms of filling the talent gap and recruiting prepared and skilled individuals, there has to be more than just a recruiting agenda. Companies need to reimagine how we engage with the private and public sectors so the investment is sustained.”

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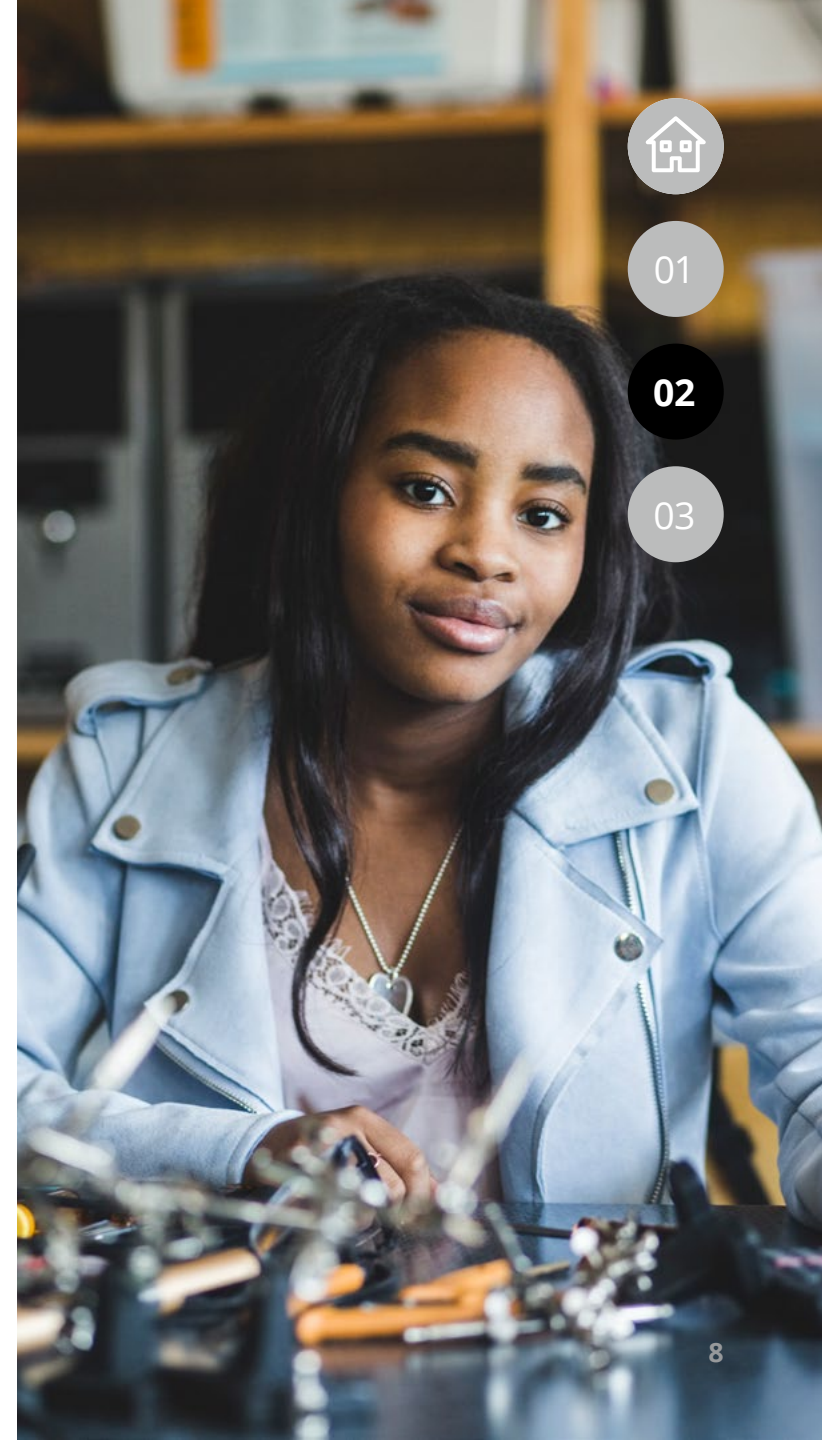
Creating opportunities for higher education students

Academic institutions have a wealth of research and knowledge, and approaching the market together can lead to solutions that accelerate DEI. This is not just a matter of funding but instead access to experiences that prepare college students for the professional workforce. Deloitte is working with Morgan State to develop an AI fluency training, which includes instruction from subject matter experts and also experiences where students can see how their knowledge translates to rewarding careers. This approach can have direct benefits for the enterprise when it comes to recruiting.

“What makes a student select one company over another for employment?” said Lewis. “This is where we talk about strategic investment and influencing choice and decision, building good will among students in terms of what is this company

about? Are they about enhancing certain community values that are also values that we hold within our community? Investing in brand equity builds the trust and connection between having an opportunity and that opportunity being viewed by students as a viable option because there are mutual values held by both parties.”

The business competition for recruiting AI-fluent employees will likely only become more critical as AI solutions and use cases proliferate. With that, there is value in upskilling and reskilling the current workforce. As an example, Deloitte and the National Association of Black Accountants, Inc. (NABA) are collaborating to help professionals in accounting and finance develop AI fluency, which can both enable them to better perform in a fast-changing AI ecosystem and access opportunities in the workforce.



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Creating opportunities for higher education students

“Our task is to figure out how we can help people of color develop AI skills and knowledge so they can have the opportunity to advance and enhance their careers and be part of the new digital economy,” said NABA President and CEO Guylaine Saint Juste. “One of the top skills needed to thrive is being a motivated self-learner, and the organization needs to make opportunities to learn available, be it by leveraging partnerships with associations like ours or internally through self-paced learning.”

This kind of thoughtful approach helps meet professionals where they are, acknowledging the need for continuous education that begins to overcome the digital divide that exists in communities of people of color, said Saint Juste.

It can deliver cascading benefits that transform DEI. It can prepare professionals to shape how AI solutions are developed and used by the organization. Better solutions can lead to better AI outcomes that impact the bottom line. And when enterprises have a diverse workforce, they can attract young professionals—in part—by having employees become ambassadors and mentors that inspire students to explore STEM, AI, and emerging technologies. With this, the talent pipeline can grow wider.

When enterprises have a diverse workforce,
they can attract young professionals





Moving from inspiration to action

Teaching, mentoring, and providing access to experiences like internships can forge a relationship with the next generation of professionals, which is a powerful lever when recruiting the best and brightest minds from under-tapped communities. It is a strategic decision to fund, support, and champion DEI in education and throughout the workforce. That strategy should be shaped by the reality that true, enduring diversity takes time.

“Business leaders need to understand that this is a long-term play,” said Saint Juste. “So many organizations are chasing immediate goals, like quarterly results. But building a talented and diverse pipeline of professionals does not happen quickly. These inequities are centuries old, so they are not going to be quick fixes.”

Yet, it may be challenging to cultivate buy-in for long-term investments. For business leaders, Phillips said the next step is to look within the company and identify where talent gaps exist and define where the enterprise aspires to be in the next 5–10 years.

“Bring other people to the table to have a conversation about this and then go out and do the research upon which decisions can be based,” she said. “If this is going to be a transformational shift in how the organization is moving forward in working with community, it is important to understand from an internal perspective, what have we done to this point, how much have we invested, and what have we seen for the investment?”



Moving from inspiration to action

A component of the internal communication is inspiring every employee to consider their individual contribution. A company "Impact Day," for example, is an opportunity to educate employees about how they can participate in these kinds of endeavors. Meanwhile, enterprise leaders should also look to potential partners in academia, including HBCUs and minority-serving institutions (MSIs). Lewis noted that an essential starting point is understanding what institutions need to up-level their offering.

"Connect with our provost for academic affairs and see how companies can contribute," he said, as an example. "Companies can come in and learn about the culture and value of institutions like mine, and then begin to craft a comprehensive investment strategy as to how the values of the company align with the institutions and vice versa."

While the longer term effort is developed, a more immediate tactic for effecting change is offering internships to nurture student interest in AI subject matter and the company. This is not relegated to working with data scientists and engineers. AI application spans practice areas. "By the time high school students are juniors, they may not even know if the emerging tech and AI fields are something to pursue in the business realm," said Bryan. "A lot of underserved students don't get the opportunity to form that perspective. Companies can provide more internships, even if unpaid, and develop partnerships with multiple schools."

From exposing young students to AI subject matter to foster academic interest to providing real world opportunities for students in higher education, building the talent pipeline is inherently collaborative. It takes businesses, schools, and community groups working together to identify a community's specific needs, address them with action and investment, and then track the data to measure the results over time.

Societal impact in DEI can happen when professional skills and resources are used to improve educational outcomes and access to opportunities. AI is a vehicle that can help turn this from aspiration to reality. This is an era of humans working with intelligent machines, and succeeding in and advancing the technology demands a diversity of voices. AI's own potential depends on this, and so too does business growth and prosperity.



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