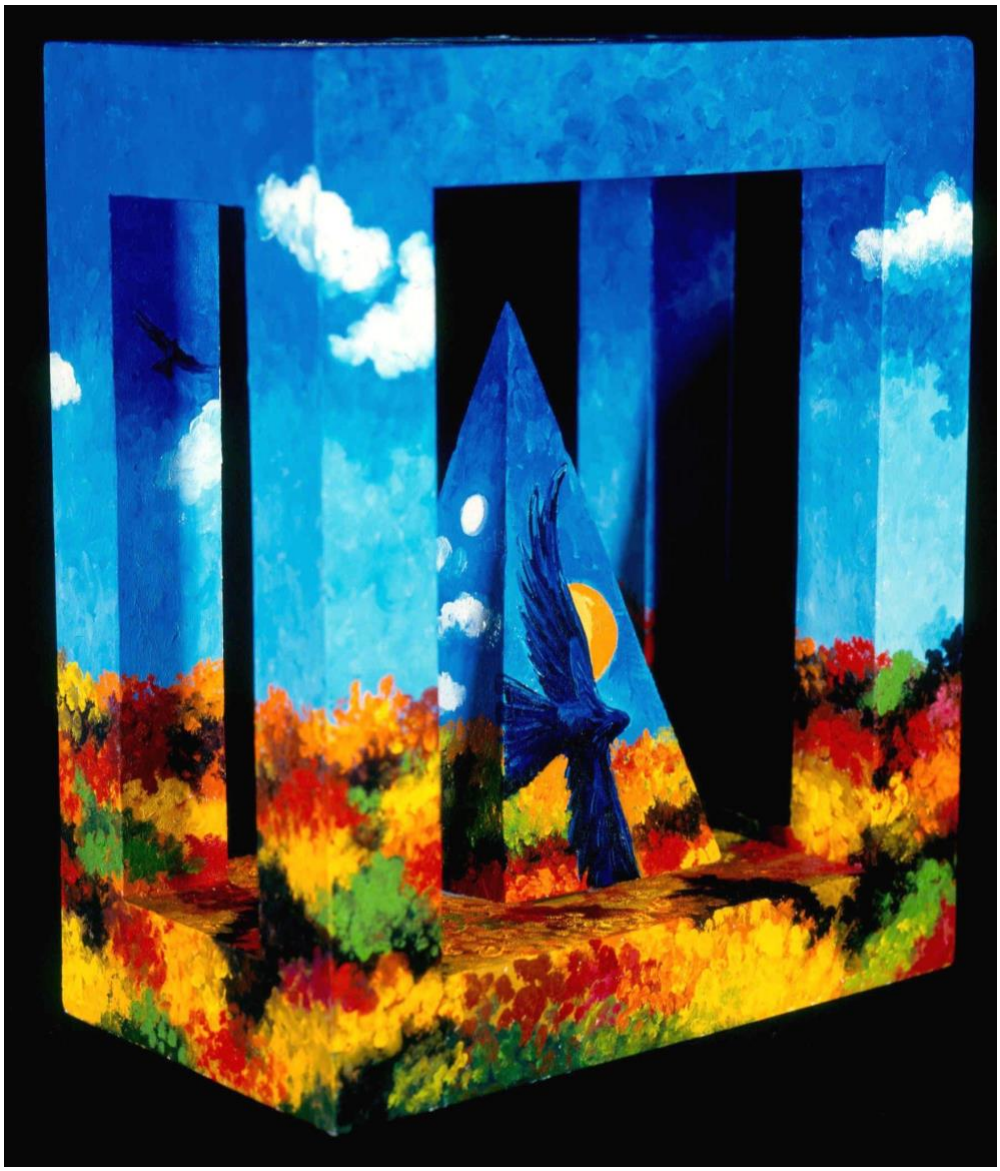

Autumn Temple Toy, Oil on canvas, 2001 © Jonathan Green.

Leading the AI Revolution

The Crucial Role of HBCUs in Steering AI Leadership

A JOINT PUBLICATION OF THE ONLINE LEARNING CONSORTIUM,
WICHE COOPERATIVE FOR EDUCATIONAL TECHNOLOGIES,
AND COMPLETE COLLEGE AMERICA

NAFEO National Association For Equal Opportunity In Higher Education

ONLINE LEARNING CONSORTIUM CELEBRATING 25 YEARS

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COMPLETE COLLEGE AMERICA

THURGOOD MARSHALL COLLEGE FUND WHERE EDUCATION PAYS OFF

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Executive Summary

The evolution of artificial intelligence (AI) presents an unprecedented opportunity for Historically Black Colleges and Universities (HBCUs) to lead in an era characterized by rapid technological advancement and societal transformation. This report explores the integral role HBCUs can play in steering the AI revolution, ensuring that the Black community remains at the forefront of educational, economic, and social progress.

Insights and Implications

The significance of AI in modern society cannot be overstated. Its influence spans across all sectors, heralding a new age of innovation and problem-solving. However, this wave of change also brings challenges, particularly in ensuring equitable access and representation within AI fields. HBCUs, with their history of academic excellence and commitment to inclusivity, are uniquely positioned to address these challenges, turning them into opportunities for their students and the broader community. This report presents the following calls to action for HBCU leaders as they advance generative AI within education for their institutions, for the country, and for the field globally:

1. **Our Understanding of AI in Education**
   - 1.1. Prioritizing ethical AI education
   - 1.2. Strengthening AI research and partnerships
   - 1.3. Centering the needs of the Black community in AI
2. **AI Policy and Practice**
   - 2.1. Implementing AI governance at the institution
   - 2.2. Building (or enhancing) AI operations
   - 2.3. Advancing AI pedagogy across disciplines
3. **AI and Curricular Development**
   - 3.1. Comprehensively integrating AI into the curriculum
   - 3.2. Promoting cross-disciplinary AI literacies
   - 3.3. Leading in AI curricular innovation
4. **AI and Industry/Workforce Development**
   - 4.1. Developing strategic partnerships with industry
   - 4.2. Promoting active and experiential learning
   - 4.3. Supporting AI research and innovation
5. **Building the Future Path for AI in Education**
   - 5.1. Establishing short-term curriculum development and faculty training goals
   - 5.2. Expanding to mid-term work to partnerships and collaborations with industry
   - 5.3. Building a vision for long-term impact through global leadership and policy

development

Our findings underscore the transformative potential of integrating AI into HBCU curricula, not just as a subject of study, but as a tool for enhancing teaching, learning, and research. This integration promises to prepare students for the complexities of the future job market, imbue them with a critical understanding of AI ethics, and empower them to contribute to the development of equitable AI technologies. Furthermore, HBCUs' engagement in AI research and policy discussions on a global stage can amplify their influence and leadership in shaping the future of AI.

Looking Forward

To harness the full potential of AI, HBCUs should implement comprehensive strategies encompassing curriculum development, faculty training, infrastructure enhancement, and partnership building. This involves curating AI-related content that reflects a balance of technical skills and ethical considerations, investing in state-of-the-art facilities, and fostering collaborations with industry leaders. Such efforts should aim not only to elevate the academic standing of HBCUs but also to ensure their students are well-prepared to navigate and shape an AI-driven world.

The future of AI is a narrative still being written, and HBCUs have the opportunity to co-author this story, championing diversity, equity, and innovation. By embracing their role as leaders in AI education and application, HBCUs can contribute to a future where technology serves humanity's broadest interests, bridging gaps and building a more inclusive society. This journey requires vision, commitment, and collective action, with HBCUs leading the charge toward a more equitable and technologically advanced future.

Welcome

Dr. Jennifer Mathes

Chief Executive Officer and Executive Director of the Online Learning Consortium (OLC)

Across the educational landscape, AI has ushered in a paradigm shift challenging educators, administrators, and students to adapt to our rapidly evolving new world. The imperative now lies in how these powerful tools can be effectively embraced and implemented to prepare individuals for an AI-infused workforce of the future. This guidebook was designed to provide Historically Black Colleges and Universities (HBCUs) with insights into harnessing AI not only as an educational tool but also as a means to capitalize on their unique cultural experiences in addressing the intersection of AI and the educational ecosystem.

AI holds immense potential to revolutionize education by offering personalized learning experiences, automating administrative tasks, and facilitating data-informed decision-making. By leveraging AI-powered tools, educators can offer personalized interventions to address individual learning needs, thereby promoting inclusivity and academic success. Within HBCUs, characterized by a rich cultural heritage and offering students a unique educational experience rooted in community, identity and tradition, the integration of AI into the educational framework involves more than just adopting new technology; it requires a thoughtful approach that honors and amplifies the cultural experiences of students. By incorporating culturally relevant content and perspectives into AI-enhanced curricula, HBCUs can enrich the learning process and empower students to navigate the complexities of an AI-driven world while staying connected to their heritage.

As we envision a world where AI serves as a catalyst for positive change, HBCUs stand poised to lead the way in shaping the next generation of AI-literate professionals who are equipped to tackle the challenges and opportunities of tomorrow.

It is with great pleasure that we share this guidebook, authored by leaders in our field dedicated to creating a more equitable and inclusive future. OLC is proud to have been a collaborator in developing this resource.

Russ Poulin

Executive Director, WICHE Cooperative for Educational Technologies (WCET)

AI is front of mind for everyone these days. Fei-Fei Li, AI pioneer and co-director of the Stanford Institute for Human-Centered Artificial Intelligence, provides important context: "I believe in the future of AI changing the world. The question is, who is changing AI? It is really important to bring diverse groups of students and future leaders into the development of AI" (2018).

Our students need to understand how to leverage these powerful tools in order to be successful in their jobs and careers. In a March 2023 report, Goldman Sachs estimates that up to two- thirds of U.S. occupations will be exposed to some degree of AI automation, and one-fourth of current work tasks in the United States and Europe could be automated by AI. Clearly, it will be critical for students to understand how to use AI if they are going to have long and successful careers.

We hope that educators, policymakers, and industry professionals can use this guidebook as a resource that explores curricular innovations and potential partnerships that can help develop the AI muscle at HBCUs. It provides institutional leaders and policymakers with actionable insights and recommendations for strengthening the AI educational infrastructure at Historically Black Colleges and Universities (HBCUs). In developing a new AI-ready workforce, HBCUs are uniquely positioned to shape a workforce that not only understands how to use AI but can help us all address the inherent biases that currently exist in these tools.

HBCUs have led the way in leveling the educational playing field with the production of 24 percent of all STEM-related baccalaureate degrees earned by Black graduates. And the role of HBCUs is especially critical now as AI begins to influence every aspect of society. Poised at the precipice of the AI revolution, there is a need for diverse perspectives to ensure that this technology is developed and implemented in an equitable manner.

WCET is proud to assist in the development of this guidebook and collaborate with its authors in building a more equitable future.

Yolanda Watson Spiva

President, Complete College America

HBCUs have long been leaders in student success for learners of all backgrounds. According to a 2023 report from the National Bureau of Economic Research, HBCUs are engines of social and economic mobility for Black Americans, graduating higher numbers of Black students when compared to peer institutions (Price & Viceisza). The White House has also noted that HBCU graduates make up disproportionate numbers of Black lawyers, engineers, doctors, and judges in America (2024). Clearly, HBCUs are at the forefront of student success for historically excluded students, and as such, these institutions deserve equal opportunities to serve their students by being at the forefront of technological innovation.

With AI on the precipice of potentially upending many aspects of our lives, including education, we must work together to ensure that HBCUs are poised, specifically, to be leaders in the use of this technology. AI offers many opportunities to support higher education—from enhancing academic resources to creating campus operational efficiencies. Toward this end, HBCUs that embrace this technology will realize more rewards than risks. However, to reap the full benefits of AI, minority-serving postsecondary institutions must be deliberate, strategic, and well-resourced. Further, the benefits of AI don't have to come at the cost of the culture and community offered by minority-serving institutions. Instead, AI should be viewed as a tool to supplement, not supplant, the incredibly student-centric work already happening at HBCUs.

The best way to build our nation's digital future is to listen to those who will lead it: today's students. At Complete College America (CCA), we have gathered input from historically Black colleges and universities through our HBCU Digital Learning Infrastructure initiative, collecting feedback from students about the ways in which they want technology to shape their college experiences. We also worked with faculty, staff, and administrators to inform a student-centered approach for the future of digital technology at HBCUs. CCA has also launched a new Council on Equitable AI, which is charged with advocating for equitable innovation and implementation of AI along with other emerging technologies.

This guidebook is informed by the research and input we've garnered from HBCU stakeholders. We are proud to contribute to this valuable resource, which we believe can further the nascent collective efforts of institutions of higher education to put equity at the forefront of technological innovation.

Dr. Harry L. Williams

President & CEO, Thurgood Marshall College Fund (TMCF)

As the leader of an organization representing 53 publicly supported HBCUs, Predominantly Black Institutions (PBIs), and Historically Black Community Colleges (HBCCs), which educate 80% of students attending such schools, TMCF understands the importance of building capacity at our member-schools to utilize, teach, and prepare HBCU students in cutting edge technologies.

TMCF, in partnership with our member-school leaders and corporate partners, works to provide targeted career readiness opportunities for HBCU students, preparing them for post-graduation careers in and across a multitude of fields. Most of these fields either currently use some type of AI, will use AI in the near future, or are integral to creating and maintaining AI algorithms and programs. It is imperative that HBCU students are able to engage in both the creation and use of artificial intelligence for their future career success. The "Leading the AI Revolution: The Crucial Role of HBCUs in Steering AI Leadership" guidebook provides HBCUs as institutions with a critical resource for creating their own policies around AI utilization and developing curricula to prepare their students to succeed in post-graduation careers.

Public HBCUs serve a unique array of students, with over 71% being Pell Grant eligible—versus a national average of 38%—and over 97% receiving some type of financial aid. Over half of all HBCU students are the first in their families to attend college. While they comprise only 3% of all colleges, HBCUs have a history of preparing top African-American leadership, with 80% of Black judges being educated at an HBCU; 50% of African-American lawyers, 40% of Black members of Congress, and 40% of Black engineers (*The Network Journal*). Throughout history, HBCUs have been leading institutions in the African-American community. Over 80% of all African American doctors and dentists trained at an HBCU.[1] HBCUs continue to lead in awarding African American students undergraduate degrees in STEM.[2] According to the NSF's rankings, HBCUs are America's top producers of undergraduates who go on to earn doctorates in science and engineering, with 30% of African American STEM doctoral recipients having been HBCU undergraduates.[3] All told, 70% of public HBCU graduates enter the middle class permanently.

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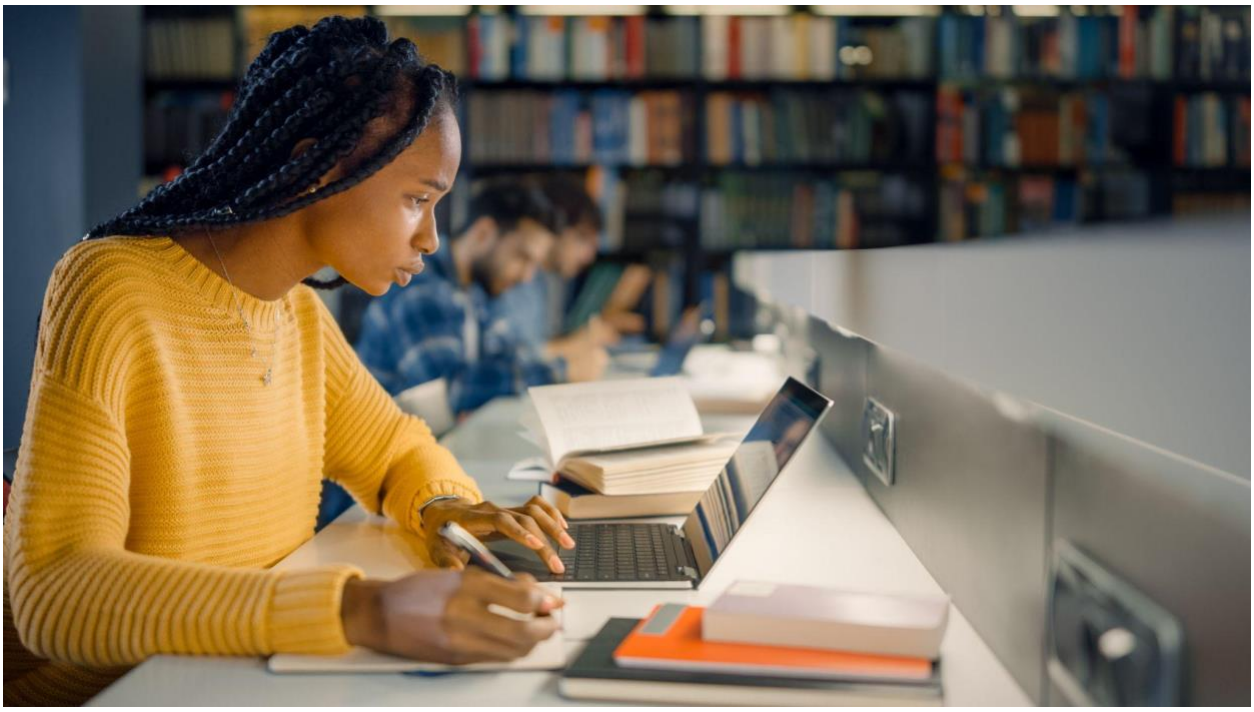
[1] Office of Civil Rights. Historically Black Colleges and Universities and Higher Education Desegregation. http://www2.ed.gov/about/offices/list/ocr/docs/hq9511.html. Washington, DC: US Department of Education; 1991 March 1991.

[2] Office of Civil Rights. Historically Black Colleges and Universities and Higher Education Desegregation. http://www2.ed.gov/about/offices/list/ocr/docs/hq9511.html. Washington, DC: US Department of Education; 1991 March 1991.

[3] National Center for Science and Engineering Statistics. Women, Minorities, and Persons with Disabilities in Science and Engineering: 2015. Special Report. Arlington, VA:National Science Foundation; 2015. Report No.: NSF 15-311.

Workforce diversity leads across all sectors to better outcomes and products. For more than 36 years, TMCF has partnered with top corporations and government agencies to identify, develop, and place HBCU talent for professional internship and full-time positions, because our corporate and government partners understand the business advantage that comes with diversity. With AI, diversity of coding and development teams is critical to reduce or eliminate biases that negatively impact minorities and under-served populations. Indeed, AI biases have historically been evident across all sectors—from human resources resume scans that automatically rejected ethnic-sounding and female names to healthcare algorithms that have underestimated Black patients' needs. Only team diversity and ethical use standards can address these issues, and HBCU graduates and faculty must be at the table to ensure true algorithm neutrality. With the guidance contained in this guidebook, TMCF hopes that HBCUs will adopt clear and useful policies for AI utilization on their own campuses and will expand their offerings so that HBCU graduates will be well-positioned to impact global AI utilization.



Lezli Baskerville

Chief Executive Officer/Counsel of the National Association for Equal Opportunity in Higher Education (NAFEO)

In my capacity as the Chief Executive Officer/Counsel of the National Association for Equal Opportunity in Higher Education (NAFEO), I am delighted to support the guidebook, "Leading the AI Revolution: The Essential Role of HBCUs in Shaping AI Leadership." AI is an area in which NAFEO has been leading its members, 106 HBCUs, and 80 PBIs, for the past two years. In partnership with Amesite Inc. (NASDAQ: AMS), a leading artificial intelligence software company, through the best-in-class, AI-powered LCESM, NAFEO has been offering a world-class AI platform for the use of HBCUs and PBIs in scaling learning programs with efficiency and effectiveness. Through the program, our members can deliver everything from first outreach in learner enrollment to certificates of completion in one streamlined system, allowing HBCUs and PBIs to expand partnerships with business, academic, and community organizations to identify and address professional skills gaps, as well as support upskilling needs of expanding alumni markets.

The guidebook's focus on the pivotal role of HBCUs in shaping AI leadership aligns perfectly with the NAFEO programmatic and policy work in the AI space, the direction of NAFEO's future work in this arena, as well as NAFEO's mission and objectives. In an era marked by rapid technological advancement and evolving societal challenges, it is imperative that HBCUs are equipped to not only adapt but also lead in emerging fields such as artificial intelligence (AI).

As the nation's premier membership and advocacy association representing all historically Black colleges and universities (HBCUs) and Predominantly Black Institutions (PBIs), for 55 years, NAFEO has championed the interests of these institutions, their students, leadership, and service communities. Founded in 1969 by the presidents and chancellors of HBCUs and other equal educational opportunity institutions, NAFEO has been instrumental in advocating for equitable access to resources and opportunities in higher education. For the above and other reasons, it is with great enthusiasm that we join forces with the Online Learning Consortium, WICHE Cooperative for Education Technologies, Complete College America, and the Thurgood Marshall College Fund in this collaborative endeavor.

Foreword

Dr. Kimberly Bryant

Founder and CEO, Ascend Ventures and the Black Innovation Lab Founder, Black Girls Code and White House Champion of Change

As the founder of Black Girls Code and a steadfast advocate for diversifying the tech industry through initiatives such as Ascend Ventures and the Black Innovation Lab, my journey has been deeply rooted in the conviction that innovation thrives on diversity. It is from this vantage point that I approach the forward-thinking work presented in "Leading the AI Revolution: The Crucial Role of HBCUs in Steering AI Leadership," a report that underscores a message I have championed throughout my career: inclusivity is not just a moral imperative but a strategic advantage, especially in the realm of AI.

The technological landscapes we navigate and shape today are increasingly governed by AI, making it crucial that the creators and custodians of this technology mirror the vast diversity of those it impacts. Historically Black colleges and universities (HBCUs) stand as beacons of excellence, resilience, and innovation, having long provided pathways to success for African American students amidst systemic barriers to education and professional advancement. This report brilliantly articulates the indispensable role that HBCUs play in the AI ecosystem—not merely as academic institutions but as crucibles for cultivating a diverse and capable workforce poised to lead in the AI revolution.

The narrative put forth in this guidebook is one of empowerment and possibility. It highlights how HBCUs, with their rich legacy of nurturing talent and fostering socio-political awareness, are uniquely positioned to contribute to the AI field. By promoting curricular innovations, fostering industry partnerships, and advocating for equitable access to resources and opportunities, HBCUs can lead the charge in creating a more inclusive and diverse tech landscape. This vision aligns with my life focus on equity and inclusion and is deeply woven into the mission of Black Girls Code and the broader objectives of Ascend Ventures and the Black Innovation Lab, where we strive to dismantle the racial wealth gap by creating space for marginalized innovators to create thriving entrepreneurial ecosystems.

The report's emphasis on multi-dimensional perspectives in AI development is a critical reminder that the technology we create must serve all of humanity, not just a privileged few. The diversity of thought, experience, and culture that HBCU graduates bring to the table is invaluable in ensuring that AI technologies are developed with an eye towards equity, ethics, and social justice. As AI becomes increasingly integrated into every facet of our lives, from healthcare and education to governance and the economy, the need for inclusive innovation has never been more urgent.

The collaboration between HBCUs and the tech industry, as outlined in this report, offers a blueprint for how we can collectively work towards a future where AI is by the people, for the people. It is a future where the voices of those historically marginalized are amplified in the rooms where decisions are made, where algorithms are designed, and where the future of our digital world is shaped. It lays a foundation for a true blueprint for generational transformation for communities of color and others most impacted by the effects of technological innovations.

Summarily, I commend the authors of this guidebook for their insightful analysis and actionable recommendations. "Leading the AI Revolution" is not just a report; it is a call to action for educators, policymakers, industry leaders, and communities to support and engage with HBCUs as they lead the way in shaping a more inclusive, equitable, and innovative future. As we turn the pages of this report, let us also turn the page on the narrative of who leads in technology and innovation, by recognizing and elevating the role of HBCUs in driving forward the AI revolution.

Brigadier General Terrence Adams

Deputy Principal Cyber Advisor to the Secretary of Defense

As we stand on the precipice of an era defined by unparalleled technological advancements, the integration of Artificial Intelligence (AI) into the fabric of military defense and national security has become a paramount endeavor. The importance of educating and preparing the next generation of leaders, innovators, and defenders in the realm of AI cannot be overstated. It is within this context that the contributions of historically Black colleges and universities (HBCUs) become critically important. This guidebook, "Leading the AI Revolution: The Crucial Role of HBCUs in Steering AI Leadership," offers an insightful exploration into how these revered institutions are poised to significantly influence the future of AI and, by extension, the future of our nation's defense capabilities.

The Department of Defense recognizes the strategic importance of AI in maintaining and enhancing the United States' military edge. In an environment where technology evolves at an exponential pace, our adversaries are relentlessly pursuing advancements in AI to challenge our supremacy. Thus, it is imperative that we not only keep pace but lead in the development and application of ethically grounded, cutting-edge AI technologies. The diversity of thought, perspective, and innovation that HBCUs can bring to this domain is invaluable. These institutions, with their rich history of resilience, empowerment, and academic excellence, are uniquely positioned to contribute to the diversity and strength of our cyber and AI workforce.

In the pages of this guidebook, the role of HBCUs in cultivating a technologically proficient, diverse, and ethically conscious workforce is compellingly articulated. It highlights the necessity for curricular innovations, partnerships with the tech industry, and the strengthening of AI educational infrastructure within these institutions. Such efforts are crucial for fostering an inclusive technological ecosystem and for ensuring that the AI technologies we deploy in defense and security are reflective of our nation's values and diversity.

The guidebook also underscores the significance of multidimensional perspectives in the development and implementation of AI. In the realm of defense, where the stakes are incomparably high, input from individuals with diverse backgrounds and experiences is essential for creating robust, resilient, and ethical AI solutions. These solutions are vital for addressing the complex challenges of modern warfare, cybersecurity, and global stability.

As the Deputy Principal Cyber Advisor to the Secretary of Defense, I am acutely aware of the critical role education plays in achieving our strategic objectives. The partnership between the Department of Defense and educational institutions, particularly HBCUs, is of great value. These are partnerships that not only enhance our technological prowess but also reinforce our commitment to diversity, equity, and inclusion.

This guidebook is more than just a resource; it is a call to action. Imperatively, it urges educators, policymakers, industry professionals, and students to engage in a transformative endeavor. By leveraging the strengths of HBCUs, we can ensure that the United States remains at the forefront of AI and cyber defense, prepared to face the challenges of the 21st century with confidence, integrity, and a commitment to securing a peaceful and prosperous future for all.

I commend the authors for their comprehensive and insightful work. I am confident that this guidebook will inspire meaningful action and contribute significantly to the preparation of our students for the future—a future where they will lead in the defense of our nation, supported by the transformative power of AI. Let us all embrace this opportunity to shape a world where technology serves humanity, guided by the principles of justice, equity, and inclusivity. Welcome to the conversation, and more importantly, welcome to the future we will build together.

Dr. Robbie Melton

Interim Provost/Vice President for Academic Affairs and Vice President for Technology Innovations, Tennessee State University

At this pivotal moment, as we embrace the burgeoning landscape of artificial intelligence and digital learning, the essence of our mission at HBCUs has never been more vital. My journey, deeply intertwined with advocating for and implementing digital learning innovations, has consistently highlighted the transformative power of education. It is with this spirit that I address our collective endeavor to prepare our students for the careers of tomorrow.

The core of our success lies in our heritage of open sharing and collaboration. HBCUs have long championed a culture of communal support, extending beyond the confines of our campuses to influence generations. This tradition is our guiding light as we navigate the complexities of integrating emerging technologies into our curricula. It is through the shared exploration of practices and methods that we can truly harness the potential of AI to serve our students effectively.

We stand at the intersection of innovation and legacy, tasked with the responsibility of equipping our learners not just with knowledge but with the wisdom to apply it ethically and inclusively. As educators, our role extends beyond imparting technical skills; we are cultivators of critical thinkers, problem solvers, and, most importantly, compassionate leaders who will shape the future.

Our collective commitment to fostering an environment of inclusive excellence and mutual growth is paramount. As we delve into this new era, let us carry forward the ethos of HBCUs— unity, resilience, and a steadfast dedication to empowering our communities. Together, we can create a future where the advancements of digital learning and AI not only reflect the diversity of our society but actively contribute to its enrichment.

In this journey towards innovation and beyond, I invite you to join me in embracing our role as pioneers. Let us share, learn, and grow together, ensuring that our students are not only prepared for the challenges ahead but are also imbued with the values that have always set HBCUs apart. Together, we can lead the way in creating a world where technology uplifts, empowers, and unites.

Dr. Michael Nettles

Full Professor & Endowed Chair of Predictive Analytics and Psychometrics, Department of Psychology, Morgan State University; Former Senior Vice President for Policy Evaluation and Research at Educational Testing Service

In the comprehensive and forward-thinking report presented by The Online Learning Consortium, Complete College America, the National Association for Equal Opportunity in Higher Education, Thurgood Marshall College Fund, and WCET, "Leading the AI Revolution: The Crucial Role of HBCUs in Steering AI Leadership," a profound argument is made for the indispensable role that HBCUs must play in the evolving landscape of AI. As a tenured full professor and endowed chair in the Center for Predictive Analytics and Psychometrics at Morgan State University, and with a background as a senior vice president and senior research scientist holding the Edmund W. Gordon Chair at Educational Testing Service, my career has intersected the realms of education, data analytics, and the pursuit of equity within academic and corporate sectors of society. This report resonates with my professional ethos and presents a roadmap that is critically aligned with the needs of our times.

The narrative emphasizes the unique position that HBCUs occupy and incorporates technological innovation as a part of the cultural legacy of the HBCUs. HBCUs are afforded both the opportunity and responsibility to play a vital role in shaping a future where AI technologies are created and implemented with an awareness of and sensitivity to the diverse tapestry of human experience. As the report eloquently argues, the historical mission of HBCUs to provide high-quality education and empowerment to African American students—and students of other races and ethnicities—places these institutions in a strategic position to play a leading role in diversifying the field of AI. This is not merely a matter of social justice but a pragmatic approach to enhancing the quality and applicability of AI technologies in a multicultural world.

The call for curricular innovations and partnerships with the tech industry, as outlined in the report, is a clarion call for change. It speaks to the necessity of bridging the gap between academia and industry to ensure that HBCU graduates are not only consumers of AI technology but also developers, critics, and leaders. The emphasis on creating a workforce that is skilled, diverse, and socially aware underscores the urgent need for inclusive perspectives in the development and deployment of AI systems. As we have seen, the absence of such perspectives can lead to technologies that perpetuate biases and inequities, rather than mitigate them.

The journey ahead, however, is not without its challenges. Strengthening the AI educational infrastructure within HBCUs will require sustained investment, innovative thinking, and collaborative efforts across sectors. It will also require us to confront and overcome historical and systemic barriers that have, at times, limited the access of African American scholars and professionals to the forefront of technological innovation. Yet, as the report inspires us to believe, these challenges are not insurmountable. They are, in fact, opportunities for HBCUs to further demonstrate their leadership in education and technology.

"Leading the AI Revolution" is more than a guidebook; it is a manifesto for change. It calls upon educators, policymakers, industry leaders, and students to recognize and support the crucial role of HBCUs in shaping an AI-driven future that is inclusive, equitable, and reflective of the full spectrum of human potential. As we stand on the brink of unprecedented technological transformation, let us commit to ensuring that HBCUs are at the forefront of this revolution, not only leading in the field of AI but also in crafting a future where technology serves the common good.

About This Report

In this report, we highlight the current work of HBCUs to advance the use of AI in both higher education and industry. HBCUs are well-suited to drive change and lead the future of AI in ways that are innovative, ethical, equitable, and inclusive. Institutional leaders, faculty and instructors, and instructional support staff can benefit from the findings of this report, which center on several dimensions of AI, including policy and practice, curricular innovations, workforce collaborations, and student engagement. We hope that readers will gain inspiration and guidance for addressing the ever-changing landscape of AI in ways that prepare their students and their institutions for the future.

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About the Online Learning Consortium

The Online Learning Consortium (OLC) is a collaborative community of education leaders and innovators dedicated to advancing quality digital teaching and learning experiences designed to reach and engage the modern learner—anyone, anywhere, anytime. OLC inspires innovation and quality through an extensive set of resources, including best-practice publications, quality benchmarking, leading-edge instruction, community-driven conferences, practitioner-based and empirical research, and expert guidance. The growing OLC community includes faculty members, administrators, trainers, instructional designers, and other learning professionals, as well as educational institutions, professional societies, and corporate enterprises. Learn more at https://onlinelearningconsortium.org/

About the WICHE Cooperative for Educational Technologies

WCET—the WICHE Cooperative for Educational Technologies—is the leader in the practice, policy, and advocacy of digital learning in higher education. We are a member-driven organization that brings together colleges, universities, higher education organizations, and companies to collectively improve the quality and reach of digital learning programs. Learn more at https://wcet.wiche.edu/

About Complete College America

Complete College America (CCA) builds movements for scaled change and transforms institutions. Specifically, CCA drives systemic change that leads to better college completion rates; more equitable outcomes; and greater economic and social mobility, especially for historically excluded students. CCA operates at the federal, state, and institutional levels and works with its national network of forward-thinking state and higher education leaders. Since its founding in 2009, CCA and its network have introduced bold initiatives that help states and institutions implement data-driven policies, student-centered perspectives, and equity-driven practices. Learn more at https://completecollege.org/

About the National Association for Equal Opportunity in Higher Education

The National Association for Equal Opportunity in Higher Education (NAFEO) is the nation's only national membership association of all of the nation's HBCUs and PBIs. Founded in 1969 by the presidents and chancellors of HBCUs and other equal educational opportunity institutions, NAFEO is a one-of-a-kind membership association representing the presidents and chancellors of the public, private, independent, and land-grant, two-year, four-year, graduate and professional, HBCUs and PBIs. NAFEO is a voluntary, independent 501(c)(3) association that has as its purpose, "to articulate the need for a system of higher education where race, income, and previous educational levels are not the determinants of either the quantity or the quality of higher education....to increase the active participation of Blacks at every level of American higher education." For 52 years NAFEO has championed the interests of HBCUs in the legislative, executive, and judicial branches of government, before international organizations, and with heads of state. NAFEO has taken and continues to take actions to prod public investments in public HBCUs such they are comparable to and competitive with public historically White colleges and universities (HWCUs); to access and leverage all possible resources to create excellent, diverse higher education systems across America, creating, funding, and sustaining programs for HBCUs their students, and other stakeholders, especially those buffered by racism, exploitation, and neglect of the economic, educational, and social institutions of America. Learn more at https://www.nafeonation.org/

About the Thurgood Marshall College Fund

Established in 1987, the Thurgood Marshall College Fund (TMCF) is the nation's largest organization exclusively representing the Black College Community. TMCF member-schools include the publicly supported Historically Black Colleges and Universities, Historically Black Community Colleges, and Predominantly Black Institutions, enrolling nearly 80% of all students attending Black colleges and universities. Through scholarships, capacity building and research initiatives, innovative programs, and strategic partnerships, TMCF is a vital resource in the K-12 and higher education space. The organization is also the source of top employers seeking top talent for competitive internships and good jobs. TMCF is a 501(c)(3) tax-exempt, charitable organization. For more information about TMCF, visit https://www.tmcf.org/

Introduction

In an era dominated by the surge of AI, it is imperative for educational institutions to arm their students with the skills and knowledge required to navigate this rapidly changing landscape. Historically Black Colleges and Universities (HBCUs) hold a unique position in this context—serving as a crucible for talent, innovation, and cultural legacy within the Black community. With a rich history of resilience and empowerment, HBCUs are stepping up to the challenge by preparing a new generation of learners for the technological revolutions of the 21st century. Our guidebook, “Leading the AI Revolution: The Crucial Role of HBCUs in Steering AI Leadership," delves into the critical role these institutions can play in shaping the future of AI and how they can foster diversity and inclusion in tech ecosystems that have long been criticized for their homogeneity.

For years, HBCUs have been trailblazers in leveling the educational playing field, offering Black students opportunities for academic and professional advancement. This becomes even more crucial in the field of AI—a domain that, in its infancy, has exhibited biases and inequities reflective of its predominantly non-diverse workforce. As AI continues to influence every aspect of society from healthcare and education to economics and governance, there is an increasing need for multi-dimensional perspectives to ensure that the technology is developed and implemented in an equitable manner. Artificial intelligence has become pervasive in the lives of twenty-first-century citizens and is being described as a tool that can be used to enhance and advance all sectors of our lives (Górriz et al., 2020). HBCUs stand at the intersection of this essential juncture.

By interweaving the academic and cultural strengths of HBCUs with the technical demands of AI, we present a compelling narrative that advocates for the necessity of these institutions in producing a workforce that is not only skilled but also diverse and socially aware. As co-authors with deep roots in the academic and tech communities, we bring a multifaceted approach to this subject—bridging the gap between technology and social justice, between innovation and inclusion.

As you turn the pages, we hope this guidebook serves not merely as a repository of information but as an inspiration for action—prompting you to engage with the transformational role HBCUs are playing in making the world of AI accessible and equitable for all.

Welcome to the conversation!

Kim Cliett Long *Beverly Robinson* *Angela Gunder* *Van Davis* *Dylan Barth*

Why AI Matters and the Unique Role of HBCUs in the AI Revolution

"AI is powerful, useful, and transformative—but just like with other new innovations it can be used for good and for bad. HBCUs must be out in front with regard to AI implementation and the ethics of AI in order to ensure that African American students and communities are bolstered by these new technologies and not harmed. The needs of African Americans must be centered as companies, scholars, and governments embrace AI in their endeavors. Moreover, HBCU faculty and graduates need to be leading research efforts related to AI and engaged and funded broadly."

Dr. Marybeth Gasman
Samuel DeWitt Proctor Endowed Chair in Education University Distinguished Professor, Rutgers University

Associate Dean for Research, Rutgers Graduate School of Education Past Chair, Rutgers University - New Brunswick Faculty Council

Why AI Matters

AI is no longer a subject restricted to the pages of science fiction novels or the fantasies of futurists. It has seeped into our daily lives, profoundly influencing industries, altering our interaction with the world, and shaping a future that was once solely a product of our imaginations. The application of AI has attracted great interest in higher education, which is highly influenced by the development of information and communication technologies (Alajmi et al., 2020). So why does AI hold such critical importance in contemporary discourse?

AI is, simply, one of the most profound technological developments of our lifetime on par with the development of the internet, the lightbulb, or, perhaps, even the printing press. As Andrew Ng, co-founder of Coursera and founder of the Google Brain Deep Learning Project, wrote in a 2023 MIT Technology Review article, "I believe AI is the new electricity. Electricity revolutionized all industries and changed our way of life, and AI is doing the same. It's reaching into every industry and discipline, and it's yielding advances that help multitudes of people" (Ng, 2023).

Influence on Multiple Sectors

The impact of artificial intelligence is widespread and not merely limited to technology fields. Just like Andrew Ng's lightbulb, the impact of AI is broad and widespread impacting efficiency and automation, data analysis, personalization, and interdisciplinary scholarship.

Efficiency and Automation

One of the most immediate and apparent benefits of AI is its capacity to process large volumes of data and execute tasks at unprecedented speeds. As noted by Davenport and Ronanki in their *Harvard Business Review* article, AI has enabled businesses to automate routine tasks, which leads to both cost savings and accelerated decision-making (Davenport & Ronanki, 2018).

Data Analysis

In the age of Big Data, the sheer amount of information generated is beyond human comprehension. AI, particularly through machine learning algorithms, can sift through this data identifying patterns and providing insights. Fields ranging from healthcare to finance are leveraging AI for data analytics, with demonstrable benefits for decision-making (Snow et al., 2017).

Personalization

Personalization is another sector where AI has made a significant impact. From tailoring movie recommendations on platforms like Netflix to individualizing advertisements on social media, AI enhances user experiences by understanding and predicting individual behaviors and preferences (Smith, 2020).

Interdisciplinary Scholarship

Artificial intelligence is also changing the face of academic research by serving as the connective tissue between various academic disciplines. As Lim and Chase wrote in a recent Times Higher Education article, "Interdisciplinarity is not a post-facto imposition on our account of AI, but an inherent part of its origins" (Lim & Chase, 2023). And as if to underscore the importance of interdisciplinary research and artificial intelligence, the United States National Science Foundation recently funded seven new AI Research Institutes that include fields as diverse as ethics, cybersecurity, climate science, neuroscience, political philosophy, and education (U.S. National Science Foundation, 2023).

Influence on the Job Market

Artificial intelligence is having and will continue to have a profound impact on our economy. Not only does this technology have the potential to completely remake a wide range of industries, but it will undoubtedly spur the development of new technologies and industries much like electricity did in the nineteenth century.

Economic Impact

AI has the potential to inject trillions of dollars into the global economy. Industries are increasingly integrating AI into their operational frameworks, opening new revenue streams, job categories, and avenues for economic growth (Bughin et al., 2017).

The Future of Work

Artificial intelligence is poised to significantly impact and disrupt the future of work. At a minimum, it will change the shape and availability of entry-level jobs in numerous fields ranging from software to accounting to advertising. It also has the potential to shape how individuals are hired as more industries focus on skills-based hiring. The World Economic Forum posits that AI will shape the future of work by driving job creation, businesses will prioritize AI skills, and work tasks will be augmented not automated by AI (World Economic Forum, 2023).

The Skills Gap in the AI Industry

However, the integration of AI into the workforce has not been seamless. While AI offers new job opportunities, there exists a noticeable skills gap. Companies struggle to find professionals with adequate training in AI technologies, making education in this domain a critical need (Arntz, Gregory, & Zierahn, 2016).

Addressing Complex Challenges

Perhaps one of the most exciting possibilities of AI is that it offers groundbreaking solutions for complex, systemic problems affecting humanity.

Innovation in Health

From predictive analytics to earlier disease diagnosis and robotic surgeries, AI has the potential to redefine healthcare, offering more precise treatments and improved patient outcomes (Jiang et al., 2017). Additionally, artificial intelligence has the potential to help society address various health disparities by providing researchers and practitioners with information and analysis of health priorities and challenges in underserved communities. For example, leveraging AI's ability to analyze tremendous amounts of data could be used to better understand the impact of environmental factors on nutrition in underserved communities and, thus, lead to the development of better nutritional programs for these communities.

Climate and Environmental Modeling

AI can be applied to the field of climate modeling, offering more accurate forecasts and thus aiding in our fight against climate change (Rolnick et al., 2022). In fact, one of the seven new AI research centers funded by the United States National Science Foundation focuses on the ways in which artificial intelligence can be used to better understand climate modeling and address climate change.

Ethical and Societal Implications

The rise of AI has not come without challenges and ethical considerations. Job displacement due to automation, concerns around data privacy, and potential biases in AI algorithms demand scrutiny and ethical governance (Crawford & Calo, 2016). As Kate Crawford writes in Atlas of AI, "Artificial intelligence is not an objective, universal, or neutral computational technique that makes determinations without human direction. Its systems are embedded in social, political, cultural, and economic worlds, shaped by humans, institutions, and imperatives that determine what they do and how they do it" (Crawford, 2021). In her 2019 book, *Race After Technology: Abolitionist Tools for the New Jim Code*, Ruha Benjamin writes about the New Jim Code which is, "The employment of new technologies that reflect and reproduce existing inequities but that are promoted and perceived as more objective or progressive than the discriminatory systems of a previous era" (Benjamin, 2019). For Crawford and Benjamin, artificial intelligence and its related technologies are never neutral and objective but deeply embedded in the racist culture that has produced them. As a result, they need to be critically evaluated and consumed with an eye toward the ways that they both replicate existing discriminatory practices while simultaneously creating opportunities to dismantle discrimination. As institutions that routinely help their students understand current discriminatory practices and the ways to dismantle that discrimination, HBCUs are uniquely positioned to provide leadership in this area.

AI matters because it represents a paradigm shift in how we live, work, and engage with the world around us. While its promises are immense, it also establishes a collective responsibility upon us all: to direct its development and application in a manner that is ethical, transparent, and beneficial to humanity. As we as a society work towards developing ethical and responsible uses of artificial intelligence, it will be critical that we develop strong governance and policies regarding AI. It will be critical that HBCUs play a central leadership role in many of these conversations. HBCUs are uniquely positioned to speak to both the ways in which technologies are negatively impacting non-White populations as well as the ways in which they can be leveraged as tools for advancing equity.

"One of the main concerns surrounding artificial intelligence lies in the potential reinforcement of human biases within its systems. This is why HBCUs possess a unique opportunity to evaluate whether these technologies inadvertently perpetuate societal inequalities, thus needing restructuring, or if they can be harnessed for positive ends. Through this evaluation, HBCUs can champion the development process of AI systems that promote fairness, inclusivity, and transparency."

Maria Parieto Morales
Student at Virginia State University

The Unique Role of HBCUs in the AI Revolution

HBCUs have long played an outsized role in the development of Black scientific and engineering talent. For example, according to the McKinsey Institute for Black Economic Mobility, twenty-four percent of all STEM-related baccalaureate degrees earned by Black graduates are earned at HBCUs (2021). Furthermore, HBCUs foster economic diversity by serving more than twice the number of Pell-eligible students than non-HBCUs (McKinsey Institute for Black Economic Mobility, 2021). Poised at the precipice of the AI revolution, this role of HBCUs is more important than ever.

Legacy of Excellence and Inclusivity

HBCUs have long been pillars of academic excellence and cultural fortitude, especially within the African American community. Established primarily post-Civil War, these institutions were designed to offer higher education to Black Americans at a time when access to such opportunities was severely limited due to systemic racism and segregation. HBCUs have stood the test of time and have consistently produced graduates who excel in a variety of fields, from science and technology to the arts and social sciences.

The educational model at HBCUs inherently incorporates inclusivity, fostering a nurturing atmosphere that values every student's perspective. Given that many of these students come from backgrounds where they are often underrepresented, especially in technical fields, the sense of community at HBCUs can be empowering. This nurturing environment serves as fertile ground for Black talent to flourish, amplifying voices that might otherwise be stifled.

Furthermore, HBCUs are well positioned to embed cultural competence into their curriculum around artificial intelligence. By helping students understand the ways in which equity and diversity should be embedded in AI technologies, HBCU graduates will be well-poised to lead these critical conversations in the field. Additionally, graduates steeped in the cultural competence that is a hallmark of HBCUs will also be well-positioned to provide diverse perspectives in the development of AI and its associated technologies, thus reducing the algorithmic biases that currently impact artificial intelligence.

And much like the role that HBCUs can play in embedding cultural competence into their AI curriculum, they are also well-positioned to leverage their deep connections with local and global communities so as to drive AI solutions that address real-world challenges and prioritize social good. This input is so critical to the development of safe, effective, and ethical AI systems that the White House AI Bill of Rights recommends that "[a]utomated systems should be developed with consultation from diverse communities, stakeholders, and domain experts to identify concerns, risks, and potential impacts of the system" (Office of Science and Technology Policy, 2023).

Closing the Racial Disparity in Tech: A Path Forward

The importance of HBCUs becomes even more pronounced when we turn our focus to the tech industry. Despite advancements in diversity and inclusion, the tech sector remains notably skewed in terms of racial representation. According to various studies, Black professionals make up a disproportionately small percentage of employees in tech companies, particularly in technical and executive roles. Only eight percent of the tech workforce is Black, and only three percent of C-suite leaders are Black (Brown, et al., 2023). This racial gap is not just a social injustice; it also undermines innovation by limiting the range of perspectives and ideas that contribute to technological advancement.

Here is where HBCUs step in, armed with a legacy of resilience and a mission to empower. These institutions not only offer curricula that are increasingly integrating cutting-edge tech subjects such as AI, machine learning, and data analytics, but they also provide an ecosystem that nurtures Black talent to enter and succeed in the tech industry.

Whereas in 2018, Black students only earned seven percent of all STEM baccalaureate degrees, HBCUs produced almost a quarter of those STEM graduates (McKinsey Institute for Black Economic Mobility, 2021). Through partnerships with tech giants, internship programs, and career counseling services that are mindful of the challenges faced by minority candidates, HBCUs are strategically positioned to bridge the racial divide in the tech world.

Fostering Native Expertise for Future Success

Beyond academic training, HBCUs have been effective in producing talent who can serve as role models and community leaders. The importance of "seeing someone who looks like you" in a field where you are underrepresented cannot be overstated. It transforms careers from aspirations into possibilities. Alumni from HBCUs often return to their alma maters as visiting lecturers, mentors, or benefactors, thereby nurturing the next generation of Black tech leaders.

Moreover, the culture of mentorship and community service ingrained in HBCUs leads to graduates who often engage in social entrepreneurship and activism. These graduates, and the HBCUs that produce them, are also well-positioned to help develop AI literacy in the broader community. By 2045, generative AI has the potential to increase the Black/White household wealth gap by $43 billion annually (Brown, et.al, 2023). A critical role in erasing that gap will be AI literacy and reskilling, areas that HBCUs can lead for Black communities. Given the far-reaching implications of technologies like AI in shaping societal structures, the blend of technical acumen and social responsibility that HBCUs cultivate in their students is invaluable.

This commitment to nurturing all-round development equips students from HBCUs not merely as job seekers but as problem solvers and innovators, a crucial distinction in an industry continually pushing the boundaries of what is possible.

"AI is the future and in order to eventually make its operation seamless we will need that input from people of color to benefit everyone in the long run."

JaMya Peoples
Student at Mississippi Valley State University

Call to Action

Leaders at our HBCUs should consider the following key takeaways and action steps when contributing to efforts that emphasize why AI matters and what HBCUs are uniquely prepared to contribute:

- **Prioritize Ethical AI Education**: Emphasize creating and integrating curriculum content that focuses on the ethics of AI to ensure students are prepared to make contributions that positively impact Black communities and beyond.
- **Strengthen AI Research and Partnerships**: Actively pursue leadership in AI research and cultivate partnerships with the tech industry and other academic institutions to enhance educational programs and ensure HBCU faculty and graduates are prominent in AI innovation.
- **Center the Needs of the Black Community in AI**: Ensure that AI development and application at HBCUs are conducted with the needs and perspectives of the Black community at the forefront, promoting technologies that support equity and inclusion.

An AI Policy and Practice Framework for Institutional Development

"HBCUs' focus on cultural competence in AI education positions their graduates to lead in developing ethical AI technologies, addressing algorithmic biases, and contributing diverse perspectives essential for innovation. This approach aligns with recommendations for inclusive AI development, emphasizing the importance of consultation with diverse communities and stakeholders."

Jaivien Kendrick
Student at Bowie State University

In 2023, Cecilia Ka Yuk Chan conducted research on perceptions and implications of text-generative AI technologies in order to develop an AI policy for higher education. Based on the findings, she proposes an "AI Ecological Education Policy Framework" to address "the multifaceted implications of AI integration in university teaching and learning." WCET, the WICHE Cooperative for Educational Technologies, has adapted Chan's framework and categorizes institutional AI policy needs in three areas—**Governance, Operations, and Pedagogy**.[4]

Undergirding all three areas of this policy and practice framework is the ethical and responsible use of AI. All policy decisions at colleges and universities should be grounded in ethical considerations of AI. Doing so ensures the responsible use of—and teaching about—these technologies. And it is often institutional administrators who lead this work. Not developing and implementing AI policies within the context of ethics opens up the institution—and thus its leaders—to, at best, inefficient use of resources that often includes funds from taxpayers, and, at worst, a serious breach of privacy, security, transparency, and equity.

[4] https://wcet.wiche.edu/wp-content/uploads/sites/11/2023/12/WCET-AI-Framework.pdf

Governance

This dimension emphasizes the governance considerations surrounding AI usage in higher education. Governance refers to the senior management at an institution, including such positions and roles as Chancellor/President, Chief Academic Officer, Chief Information Office, Vice President for Student Services, VP for Institutional Research/Effectiveness, and others depending on the campus context. Governance may also encompass managers such as Deans and Chairs of academic discipline units. Members of senior leadership will be the initiators for the Governance dimension of the framework. As they hold decision-making authority they should set the tone for effective and innovative AI use across campus and ensure that all AI policies and practices support the mission and goals of the institution and foster an equitable and inclusive environment.

Below, we suggest six key areas of responsibility:

Data Governance

Data governance refers to an institution's policies and processes that ensure that effective and responsible management—including security—exists throughout the complete lifecycle of the data, and data controls are implemented that support business objectives.

Evaluation of AI Use Across the Institution

Campus administrators should also oversee (working in concert with such units as Institutional Research and Information Technology) the evaluation of the effectiveness of AI in every use. The information and data collected should be harnessed for continuous improvement of AI planning, policies, and practices. By regularly collecting feedback from all users, including students, colleges, and universities, institutions can make informed decisions about how to improve AI implementation. Evaluating the effectiveness of AI tools in enhancing learning outcomes is also vital in determining their value and making adjustments as needed.

Promoting and Monitoring Faculty and Staff Usage of AI, Including Research

Where appropriate, institutional governance should work to encourage campus personnel, including faculty, and students to utilize AI technologies. It may be important to continue to emphasize that, even with an increased use of AI, faculty remain centered as the subject matter experts and that AI technologies can support their ongoing role as SMEs. Along with this, though, comes the responsibility of monitoring that use—including while conducting research—to ensure that it is ethical, effective, and appropriate.

Inclusive, Equitable Access

Ensuring equitable access to AI technologies is crucial for fostering an inclusive learning environment. Universities should work to provide the appropriate technologies and support to all students, faculty, administrators, and staff, regardless of their background or access to technology. By promoting equal access to AI technologies, universities can help level the playing field and ensure that all students and staff have the opportunity to benefit from the advantages offered by AI integration.

Intellectual Property

Leaders at institutions will need to consider how intellectual property, including research, course materials, and student-produced work, is being defined and protected. However, these policies must be developed in accordance with U.S. and international copyright laws (which are scrambling to keep up with the new technologies) and, thus, likely should involve collaboration with the institution's legal counsel.

AI Use and Promotion, Tenure, and Re-Appointment Practices

Institutional leaders should also consider how works produced using AI are considered in the promotion, tenure, and reappointment of faculty. These processes can be used to reward and incentivize innovative research and teaching, but they also should guard against plagiarism of content in portfolios and dossiers. Institutions should develop policies that specifically address the expectations around AI-generated content and activity and the development of promotion and tenure dossiers.

Operations

This dimension assists in the understanding and implementation of AI across the institution and includes staff in key areas such as Academic Affairs, Information Technology, and Centers for Teaching and Learning Effectiveness.

Of note are the following three areas of responsibility:

Professional Development (Training & Support)

Training and support on AI technologies should be offered to all who use or may use AI, including administrators, staff, faculty, and students. Effective training and support can go a long way to mitigate and alleviate often extensive (and legitimate) concerns about integrating AI into work, instruction, and learning. Investing in training, support, and resources can help educators, their students, and others feel more confident and capable in navigating the complexities and ever-changing landscape of AI technologies.

Developing and Maintaining Infrastructure for AI

The responsibility for developing and maintaining an institution's AI infrastructure will likely fall primarily to Information Technology in consultation with other units to determine needs and evaluate costs and efficacy of tools utilized.

Review and Recommend AI Implementation to Improve Operational Practices

All operational units should be engaged in scanning the landscape of AI to review and recommend platforms and tools that can enhance the efficiency and effectiveness of the institution's operations, whether for student services and support, instruction and learning, admissions, recruitment and marketing, staff workflows, and resource planning, among others.

Pedagogy

This dimension emphasizes the practical implementation of AI to support instruction and learning in the classroom. Faculty are the initiators of this dimension, working closely with those in operations to actualize policy and planning from the governance level while always considering ethical dimensions. Instructors are ultimately responsible for designing and implementing curricula, activities, and assessments that utilize AI technologies. They will need to gain some expertise to determine how AI can best support and enhance students' learning experiences while assisting learners in understanding the implications for academic integrity.

Here we highlight seven areas of responsibility:

Academic Integrity

Generative AI has raised concerns that students will misuse the technologies to plagiarize. The more clear and consistent policies are, the more likely students will understand and follow them, reducing the chances of misuse. Policies and guidelines may range from those that ban the use of AI in the classroom altogether, to those that allow and even encourage it. Policies regarding appropriate attribution and acknowledgment of AI technologies used to create assignments and other products of learning are crucial as well. There may be an institutional policy regarding this; if not, faculty should develop their own.

Assessment Practices

Assessing the effectiveness of learning is a hallmark of education; however, it has been historically fraught and intertwined with ensuring academic integrity. The increasing ubiquity of generative AI has further complicated these practices, necessitating reconsideration of assessment methods to balance the benefits of AI with the need to maintain academic integrity.

Clear Communication to Students Regarding AI Expectations

Faculty should clearly state in the syllabus how students will be expected to use AI in the class and should also verbally communicate those expectations on the first day of class. Being clear about how a faculty member will leverage AI in the course allows students to make informed decisions about whether or not to stay in the course, and it helps students feel confident in knowing how to engage with AI tools responsibly.

Developing Student AI Competencies and Skills/Workforce Preparation

The increasing ubiquity of generative AI in the workplace calls for a new digital literacy. This need makes it imperative for institutions to prepare students for this complex technological working landscape, equipping them with skills and knowledge to successfully navigate not only the current landscape, but a rapidly evolving one as well. Therefore, not only should faculty teach at least basic skills students need to integrate AI into their work, but also evaluate when it is appropriate to use AI, how to evaluate the tools, and to understand their role in professional settings.

Understanding Algorithmic Biases

Instructors should make students aware of the possibility of discrimination being programmed into AI, since humans—who are prone to biases—must be a part of the process to develop inputs used (with the recognition that humans may themselves perpetuate discriminatory practices through the data). Instructors can draw on the work done by Ruha Benjamin and Kate Crawford, who explore algorithmic biases in new technologies. In her work *Race After Technology*, Benjamin discusses what she calls the New Jim Code, "the employment of new technologies that reflect and reproduce existing inequities but that are promoted and perceived as more objective or progressive than the discriminatory systems of a previous era" (Benjamin, 2019).

Regular and Substantive Interaction

The use of AI to augment or even replace certain instructional and related support practices, such as information delivery, responding to questions, assessment, tutoring, and personalized learning and guidance, could have a significant impact on norms and expectations around interactions between students and instructors. Institutions should ensure that they address the extent to which faculty are allowed to automate instruction through the use of artificial intelligence and the aspects of instruction that can leverage artificial intelligence. For most institutions, this will mean revising existing policies on regular and substantive interaction.

Learner Accessibility

It is important to consider the ways in which some generative AI tools might not be accessible for all students with disabilities and learning challenges in general, while others may support accessibility, including for users of assistive technology. All learners using assistive technology must be able to meaningfully engage and independently interact with AI interfaces and outputs.

Call to Action

HBCU leaders should integrate these three strategic focuses from the AI Policy and Practice Framework to drive their institutions' AI initiatives forward:

- **Implement AI Governance**: Develop and enforce ethical governance frameworks that underpin all AI initiatives, ensuring they align with institutional values and foster inclusivity.
- **Build/Enhance AI Operations**: Actively build and maintain AI infrastructure, securing resources for technological advancement and offering comprehensive AI training for the institutional community.
- **Advance AI Pedagogy**: Innovate and integrate AI into curricular designs, focusing on building AI literacies and ensuring educational practices prepare students for an AI-influenced world.

AI and Curricular Innovation

"HBCUs serve myriad students, all of whom come from different backgrounds, while maintaining a sense of community on campus. It is this very nature of HBCUs that make learning more accessible to students. Professors and those with the authority to do so are able to shape and design curriculum and support measures to ensure the entirety of the coursework is able to be grasped by all students. This aforementioned mentality, already held amongst many at HBCUs, coupled with AI technology will enhance curriculum development and effectiveness, as a more fine-tooth tailoring can be done with AI technology."

Karleigh Landry
Student at Xavier University of Louisiana

Why AI in the Curriculum?

The integration of AI in contemporary education represents a significant shift, offering unique opportunities for enhancing learning through personalized, efficient, and engaging pedagogies. HBCUs, with their rich legacy of academic excellence and inclusivity, are well-suited to spearhead this transformation for their institutions as well as the field. They stand to make pivotal contributions by embedding AI into their curricula, aligning with their mission to empower their students through accessible and tailored educational experiences, a challenge that all institutions face in ensuring equitable access to a quality education in any context, modality, or circumstance. The fusion of AI into HBCU curricula not only enriches the educational landscape but also prepares students for an AI-enhanced future, ensuring they remain competitive in the evolving job market.

Understanding AI and Its Impact on HBCUs

Understanding AI and its broader implications necessitates a cross-disciplinary approach, where the curriculum extends beyond mere technical knowledge to encompass the societal, ethical, and economic impacts of AI applications. This comprehensive educational strategy enables students to grasp how large language models (LLMs)— the structures that power generative AI—function within various contexts and underscores the critical importance of AI across industries. Such an approach ensures that HBCU graduates are not only proficient in AI technologies but also equipped to address the ethical dilemmas and challenges that accompany these advancements. By fostering an environment where ethical considerations are integral to AI education, HBCUs can cultivate future professionals who prioritize responsible AI use in their respective fields.

Benefits of an AI-Focused Curriculum

The benefits of an AI-focused curriculum are manifold, enhancing job market readiness, spurring innovation and entrepreneurship, and reinforcing the cultural relevance of technology. As AI continues to reshape the landscape of numerous sectors, students adept in AI literacy and prepared with an ethical understanding of AI will navigate the professional sphere more effectively. They will contribute to economic growth, innovate solutions to societal challenges, and champion inclusivity within the tech industry. Riggs et al. (2021) highlight the significant relationship between faculty attitudes toward computers and online teaching innovation at HBCUs, suggesting a readiness within these institutions to embrace digital advancements in education. This readiness positions HBCUs to lead in democratizing education through AI, ensuring their students are not only prepared for the challenges of the future but also capable of leading the charge toward a more equitable and innovative tomorrow.

Building AI Literacies Across the Curriculum

Integrating AI into curriculum development at HBCUs enriches the teaching and learning landscape by fostering a range of essential literacies across disciplines.

Benefits to Educators

By utilizing AI tools for efficiency, educators can significantly improve productivity in academic and professional tasks, freeing up more time for interactive and engaging teaching methods. This transition not only benefits teachers by streamlining their workload but also enhances the learning experience for students through more focused and personalized instruction. Beyond the course design and curriculum development stage, these benefits extend to the facilitation and teaching process as well. Personalized learning through AI, particularly through the offering of regular, substantive feedback and virtual tutoring, ensures that each student's educational journey is tailored to their individual needs and preferences. Additionally, project-based learning, supported by AI, provides hands-on experience and active learning that is adaptive and personalized, enriching the students' project experience and enhancing their practical skills in a real-world context.

"AI can help fill the gap through personalized tutoring and catering to different learning styles for students, instead of continuing a one-size-fits-all approach. Creating a curriculum that still aligns with the required texts will decrease the chances of students withdrawing due to difficulty in learning and comprehension."

Mililani Stewart
Student at Lawson State Community College

Benefits to Learners

Beyond the benefits for educators, learner interactions with AI that has been embedded into the curriculum positions students to gain critical competencies that will continue to serve them past the classroom and well after graduation. The incorporation of generative AI into the curriculum also boosts creativity and digital literacies, enabling students to explore new realms of innovation and problem-solving. This approach encourages students to experiment with new creative mindsets and communicative modes within projects and assignments, fostering a culture of innovation and imbuing within them a marketable skill that is prized in the workplace. AI's contribution to decision-making processes and the development of critical thinking skills is invaluable, offering students the ability to sift through data, analyze trends, and make informed decisions with AI-driven insights. Relatedly, data literacies have become increasingly important in the digital age, and through teaching data analytics, students gain the ability to interpret and leverage data effectively. The curriculum also emphasizes the importance of teaching programming and coding, foundational skills for understanding and innovating within the AI space, as well as gaining knowledge in systems thinking and logic models.

Building the Future Workforce

Curricular innovation in the age of AI also means preparing students for an AI-enhanced workplace, one where they are equipped with the skills to navigate AI-driven environments and to collaborate effectively with AI systems. This preparation is critical for ensuring that graduates are competitive in the job market and capable of leading ethical AI initiatives. By weaving AI literacies throughout the curriculum, HBCUs are positioned to produce graduates who are not only technologically proficient but also equipped to use AI to drive social innovation and ethical progress in their respective fields. This holistic approach to AI education ensures that HBCU students are prepared for the challenges and opportunities of an increasingly AI-integrated world (George & Wooden, 2023).

Generative AI as a Curriculum Development Tool

Moving from the transformative impact of AI across educational disciplines in developing critical digital literacies, it's also important to discuss how educators can harness generative AI throughout the entire course development process. This utilization marks a significant evolution in curriculum design, offering unprecedented efficiencies and enrichments, particularly at a time when HBCUs are having to rapidly move online to address needs for courses and programs that can reach a wider audience (Bagasra, 2019). Creating clear outcomes and objectives is foundational in course design, and generative AI can provide educators with insights and suggestions based on data from similar successful courses that can then be adapted to specifically target the needs of learners at HBCUs. This aids in formulating goals that are not only ambitious and achievable but situated in ways that are culturally affirming and connected to broader academic goals.

Generative AI in Course Planning

In building course maps and lesson plans, generative AI proves invaluable by suggesting relevant topics and modules, organizing content cohesively, and ensuring a balanced pacing and academic rigor. It also helps in crafting syllabi that reflect cultural diversity and inclusivity, enhancing the learning experience for all students. This includes work on established and inherited courses, simplifying the process of adapting courses for different durations or delivery modes, and making curriculum design more flexible and responsive to diverse learning environments. Additionally, developing assignments and activities that engage students becomes less daunting with AI's assistance. Dialoguing with a generative AI tool will yield the development of activities that not only align with the learning objectives but also cater to creating a classroom where belonging and inclusion are emphasized, thereby ensuring that all students can connect and engage more deeply with course content.

Generative AI and Quality Assurance

Beyond course mapping, generative AI supports the refinement of courses through quality assurance and a process of continuous improvement. From conducting peer reviews to student feedback integration, generative AI can help with the process of aligning learning objectives with content and assessments, ensuring coherence throughout the course. Additionally, generative AI tools can be used for course assessment in formative and summative ways, pulling from established quality frameworks (i.e. the OLC Quality Scorecard Suite[5], the Peralta Online Equity Rubric[6]) to offer educators and designers a detailed analysis of the course's effectiveness, and potential areas of improvement and growth. This process allows for an interactive and holistic approach to ensuring course quality that centers on maintaining relevance, engagement, and impact over time.

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[5] https://onlinelearningconsortium.org/consult/olc-quality-scorecard-suite/

[6] https://www.peralta.edu/distance-education/online-equity-rubric

HBCU Leadership in AI-Supported Curriculum Development

As we continue to explore the promise of AI-supported curriculum development, HBCUs can serve as strategic leaders in ensuring the integration of these technologies serves to enrich educational content and pedagogy.

Representative and Culturally-Affirming Curriculum Development

With their rich experience serving learners from a plurality of lived experiences, HBCU leadership is particularly successful in informing the field of how building culturally affirming curricula acknowledges and celebrates the diversity of student backgrounds, thereby increasing student engagement and belongingness (Arroyo & Gasman, 2014; Eakins, A. & Eakins, S.L., 2019). By harnessing AI, educators can craft learning experiences that are not only inclusive but also deeply resonant with students from all walks of life. AI's role in this process is twofold: it aids in developing curricula that reflect a wide array of cultural narratives and assesses the effectiveness of existing courses in meeting the diverse needs of students. By incorporating diverse perspectives, AI can help minimize biases inherent in its data sources, ensuring that the curriculum not only represents but also resonates with the broad spectrum of student identities. HBCUs, with their deep commitment to serving diverse student populations, are uniquely positioned to lead in infusing AI with the rich tapestry of cultures and perspectives needed to enrich LLMs and, by extension, the AI-driven educational tools of the future. This pioneering effort in AI application sets a benchmark for the wider educational field, demonstrating how technology can be leveraged to reflect a broad spectrum of cultures, perspectives, and histories, thereby preparing students for a globalized world.

Serving Learners of the Greatest Need

HBCUs' expertise in supporting students from various backgrounds, including those from rural communities and those seeking academic and economic mobility, underscores their pivotal role in AI and curriculum development. Their deep understanding of the complexities of student support allows for the creation of more inclusive educational experiences that bridge equity gaps. This capability is not just about adapting to AI advancements but also about shaping them to ensure they serve as tools for empowerment rather than exclusion. As HBCUs harness AI to enhance curriculum development, their insight into the diverse needs of their student bodies will ensure that AI technologies are leveraged to promote equity and inclusivity across all levels of education.

Closing the Gaps Through Community

The experience of HBCUs in building community around practice offers a blueprint for the ethical and equitable creation of curriculum using generative AI. Addressing skill gaps, the under-resourcing of educational innovation, and the spread of misinformation requires a community-driven approach, emphasizing the importance of sharing knowledge and resources among educators and promoting technological innovation (Riggs et al., 2021). HBCUs have long championed open practices for sharing effective methods and engaging in open pedagogy, setting a precedent for leadership in the AI movement. By fostering communities of practice centered on generative AI, HBCUs can ensure that their institutions remain at the forefront of educational innovation (Earl, 2021), leading the way in developing AI-enhanced curricula that are as inclusive and impactful as they are forward-thinking.

Call to Action

Leaders at HBCUs should embrace these essential insights to leverage AI within their curriculum effectively:

- **Implement Comprehensive AI Integration**: Focus on embedding AI throughout the curriculum to provide personalized and efficient learning experiences, preparing students for an AI-driven future.
- **Promote Cross-Disciplinary AI Literacies**: Develop curricula that not only cover technical aspects of AI but also its societal, ethical, and economic impacts, ensuring graduates are well-rounded and responsible AI users.
- **Lead in AI Curriculum Innovation**: HBCUs should position themselves at the forefront of AI education, utilizing their unique strengths to prepare students for technological advancements and ethical challenges.

The Importance of Industry Partnerships and Student Development

"Integration of AI labs, as well as integration of the technology itself into the curriculum, not only creates a platform for students to apply knowledge learned into real-world scenarios, but it fosters an environment that supports creativity."

Karleigh Landry
Student at Xavier University of Louisiana

Building Industry Partnerships: A Symbiotic Relationship for Growth and Innovation

The Importance of Public-Private Partnerships

Partnerships between academic institutions and businesses are mutually beneficial and can lead to meaningful validation for program outcomes, hands-on experiences for students, and curricular revisions that best reflect the current state of the field. The collaborative nature of public-private partnerships (PPPs) is not just a supplemental aspect of an AI-focused educational program—it's a cornerstone. Academic institutions can benefit from the financial and intellectual resources of industry partners, including research funding, state-of-the-art equipment, and internship opportunities. Furthermore, businesses gain a competitive edge through access to the latest research and a pool of skilled individuals for potential employment.

Private partners are well-situated to inform the outcomes of academic programs centered on AI and adjacent fields, so they have the potential to provide an enormous impact on academic curriculum, which helps institutions prepare students for the workforce, focusing on skills, knowledge, and abilities that will lead to meaningful and lucrative careers. This relationship requires academic institutions to be transparent and communicative about how they are designing their programs and courses as well as their goals for graduating students. One example of an effective collaboration is for institutions to engage with an advisory group composed of industry leaders to align college and university curricula with workforce needs on an ongoing basis. Furthermore, when businesses actively engage with

academic institutions, they implicitly validate the curriculum's relevance to real-world applications. This can be particularly beneficial for recruitment efforts, as students and faculty often look for programs with demonstrable industry ties (Agrawal, 2001). Plus, an official seal of approval or endorsement from a well-known and well-respected industry partner can significantly boost the credibility of an educational program.

Transformative Educational Experiences

For students, some of the most transformative educational experiences center on tackling real-world challenges. Industry partners can help AI instructors develop assessments and activities that pose practical problems for students to solve as part of their coursework or thesis projects. Such industry-informed experiences are valuable for both sides, as students get a taste of real-world challenges and problem-solving, while companies receive innovative solutions from fresh perspectives. Internships and similar programs with industry partners are particularly important for students to gain applicable skills and experiences while networking with key professionals in the field. Internships offer more than just a glimpse into the corporate world—they serve as training grounds where students can apply theoretical concepts in practical settings. In some cases, these experiences can be so enriching that they lead to curriculum adjustments to better prepare students for the demands of the industry (Cantor, 1995).

The importance of professional networking for career development cannot be overstated. Internships provide a platform for students to meet and interact with industry leaders, peers, and mentors. According to research from LinkedIn, approximately 80% of all jobs are filled through networking (LinkedIn, 2017). Students can benefit greatly in their careers when academic institutions are intentional about finding and promoting internship placements that fit with students' needs and interests and align with the strengths and goals of their industry partners.

For companies, the internship process acts as a form of "trial period" that can lead to more informed hiring decisions. A study by the National Association of Colleges and Employers (NACE) indicates that around 58% of interns transition into full-time employment with their host companies (2019). Both academic institutions and industry partners benefit when students are employed after graduation: colleges and universities can boast about job placement rates, and businesses are more likely to have new employees that are successful. Students benefit most of all by having gainful employment upon completion of their studies.

Research Collaborations

In terms of research, academic institutions and industry partners can collaborate on research in mutually beneficial ways. Industry partnerships can provide educational institutions with valuable data from the field, thereby bridging a common gap in academic research.

This availability of high-quality, real-world data enriches the research process, making it more applicable and impactful (Siegel et al., 2003). Industry partners themselves may significantly benefit from the findings that emerge from the research process.

Research in AI can be costly, often requiring specialized hardware and software. Industry collaborations can mitigate these costs through funding and resource-sharing, enabling institutions to undertake more ambitious projects (Georghiou, 1998). Furthermore, industry partners who fund academic research and then employ interns and graduates are more likely to have workers who can effectively use the tools necessary to be successful. Research that is born out of industry-academia collaborations tends to have a more significant impact, often leading to publications in high-impact journals. These publications not only elevate the institution's academic standing but also attract quality talent in both faculty and student demographics (Rosenberg, 1992).

Conclusion

Building industry partnerships has evolved from being a strategic choice to a critical need for educational institutions in the AI landscape. Public-private partnerships, internships, and research collaborations serve as multi-faceted enablers, enriching the learning experience and ensuring practical utility. The ROI (Return on Investment) for engaging in these partnerships goes beyond financial gains—it involves academic enhancement, skill development, and long-term sustainability in a rapidly evolving domain.

Student Engagement and Resources: Creating a Holistic Learning Ecosystem

On-Campus AI Labs

Building state-of-the-art AI labs is a significant step toward nurturing innovation and creativity among students. Providing high-performance computing facilities, GPUs for deep learning, and specialized software tools like TensorFlow and PyTorch creates an ecosystem that encourages hands-on experimentation (Vardi, 2019). Students may not otherwise have access to the advanced hardware and software to keep up with this dynamic field.

On-campus AI labs serve as a sandbox where students can apply their theoretical knowledge in real-world scenarios. Whether they are training machine learning models, developing conversational agents, or analyzing big data sets, students can work on projects that align with current industry standards (Honey & Hilton, 2011). These experiences can be highlighted when students seek employment after graduation.

Innovative problem-solving often arises from interdisciplinary collaboration. Interdisciplinary research is more impactful and cited more frequently than discipline-specific research (Larivière & Gingras, 2010). On-campus labs can serve as convergence zones where computer science students interact with peers from healthcare, environmental sciences, and social sciences, encouraging a broader understanding and application of AI.

Institutional Support and Resources

Student-run organizations focused on AI can augment formal education by facilitating workshops, hackathons, and guest lectures from industry experts. Peer-to-peer learning opportunities through these organizations can significantly improve skill levels and contribute to a well-rounded education (Brown & Adler, 2008).

Institutions should ensure that their student and career advisors are well-equipped to provide proper guidance to students entering into AI fields. Advisors should stay informed of key trends in AI and adjacent fields by connecting with both faculty and industry partners and listening to the needs of their students.

Competitions like Kaggle contests, RoboCup, or the Data Open offer platforms to apply AI skills in a competitive setting. Project-based and challenge-based learning experiences improve student engagement and retention of material (McKinsey & Company, 2018).

Competitions and organizations serve as networking platforms, offering students a chance to connect with industry professionals, academics, and peers. These networks often provide pathways to internships, research projects, and eventually, career opportunities (Borgatti & Halgin, 2011).

Online Resources and E-Learning Platforms

Online education platforms like Coursera, edX, and Udacity offer students the flexibility to learn at their own pace, which can be particularly beneficial for understanding complex AI algorithms and frameworks (Means et al., 2013). Self-paced learning allows students the opportunity to skim topics they already understand and focus more deeply on the topics they don't.

These platforms feature courses by faculty from global institutions, thus exposing students to multiple viewpoints and ways of thinking. Such a diverse educational experience prepares students for a more globalized work environment (NMC Horizon Report, 2016).

Beyond formal courses, the internet is rich with supplemental materials such as blogs, YouTube tutorials, and research papers. Websites like arXiv.org provide free access to a wealth of academic papers, enabling students to stay up-to-date with the latest research (Harnad, 2008).

Conclusion

Creating a holistic learning ecosystem in AI education goes beyond classroom instruction and entails a multi-pronged approach that includes on-campus labs, student organizations, and online resources that can significantly enrich the learning experience. This comprehensive strategy ensures that students are not just academically prepared but also skilled, networked, and primed for the opportunities and challenges in the fast-evolving field of AI.

Call to Action

To strategically position HBCUs at the forefront of AI advancements and student development, leaders are encouraged to prioritize these key actions:

- **Develop Strategic Industry Partnerships**: Establish meaningful collaborations with businesses to enrich AI curricula and create real-world learning opportunities.
- **Promote Experiential Learning**: Enhance students' readiness for the AI-driven job market through internships and practical projects in collaboration with industry partners.
- **Support Research and Innovation**: Engage in research partnerships and secure resources for cutting-edge AI projects, ensuring students have access to the latest technologies and learning tools.

AI at HBCUs: A Path to the Future

"This guidebook is a roadmap outlining the unique role HBCUs can play in shaping the AI revolution. The destination is a journey to a frontier of innovation and creativity that can position these institutions to incorporate AI in every aspect of the academic enterprise and partner with industry and government in solving complex problems by preparing academically and culturally prepared graduates to compete in this emerging market."

Dr. Ricardo A. Brown
Associate Dean for Academic Programs, The University of the District of Columbia

Future Direction and Long-Term Goals for AI Education at HBCUs

The journey towards integrating AI into the fabric of HBCUs should present a transformative opportunity, not just for these institutions but for broader societal impact as well. The vision for the future should be both ambitious and achievable, with targeted goals planned to unfold over the next 15 years.

Teaching and Learning Excellence

Within a five to ten year horizon, HBCUs should plan to become recognized Centers of Excellence in AI research and education, fostering a vibrant ecosystem that nurtures underrepresented talent. This initiative, expected to materialize within three to five years, should emphasize the creation of a robust pipeline that propels students into the forefront of AI advancements. To support this vision, strategic partnerships with leading tech companies should be established in the next two to four years, laying the groundwork for internships, co-op programs, and collaborative research endeavors.

Grassroots to Global Engagement

Community engagement should form a crucial pillar of this strategy, with educational programs planned to roll out within two to three years, demystifying the technology and spreading its benefits widely. Looking further ahead, within a ten- to fifteen-year timeframe, HBCUs should plan to take on a leading role in global discussions and initiatives related to AI ethics, policy, and innovation. This ambitious roadmap should not only

prepare students for the future but also position HBCUs at the heart of the AI revolution, contributing significantly to a diverse and inclusive technological landscape. Associations, industry partners, and government agencies that share values with HBCUs can be instrumental partners in supporting HBCUs in this transformative work for the future.

Driving Pedagogy and Research

In the next one to three years, HBCUs should embark on a rigorous assessment and enhancement of their AI curricula, involving close collaboration with industry partners to ensure the competitiveness of their graduates in the AI field. This phase involves the development of new courses, revision of existing ones, hiring of specialized AI faculty, and the provision of professional development opportunities for current staff. Securing the necessary initial funding and establishing the requisite infrastructure will be crucial steps in this early stage, alongside launching outreach programs to introduce AI to the wider community.

Within three to seven years, the focus should shift towards solidifying partnerships with tech companies for both research collaborations and job placement opportunities for graduates. Building an active network of alumni working in AI to mentor current students, and initiating scholarship programs aimed at fostering diversity within AI fields, will be key priorities.

Looking towards the long-term goals of seven to fifteen years, HBCUs should aim to position themselves as leaders in the global AI conversation through hosting international events on AI ethics, policy, and technology. Striving for groundbreaking research that could lead to patents or publications—and expanding their focus to include contributions to international AI policies and collaborations—will help cement their role in shaping the future of AI standards worldwide.

Long-Term Benefits

As HBCUs navigate the evolving landscape of technology and education, their role in shaping the future of AI brings myriad benefits to not only their own institutions but also society and the world at large.

HBCUs stand to gain substantially by embracing leadership roles in AI. This leadership enhances their academic reputation, making them more attractive for grants and private donations. Moreover, it solidifies their status as pivotal contributors to the AI field, enabling them to attract top talent among both faculty and students. The financial and reputational benefits derived from this leadership position further empower HBCUs to expand their research capabilities and educational offerings, ensuring their students are well-prepared for future AI challenges.

For sponsors and proposers, HBCUs at the forefront of the AI revolution offer invaluable access to some of the brightest, yet underrepresented, minds in the field. This collaboration not only taps into a diverse talent pool known for driving innovation but also enhances problem-solving capabilities across AI disciplines. Such partnerships enrich both the proposers' projects and the broader AI landscape with fresh perspectives and unique solutions, fostering an environment where diverse thought flourishes and innovation is accelerated.

The involvement of HBCUs in AI promises a more inclusive community within this field, crucial for the development of equitable technologies. By creating a workforce that is well-versed in AI and reflective of society's diversity, these institutions play a key role in ensuring that technological advancements contribute positively to national competitiveness. The ripple effect of this inclusivity reaches far beyond campus borders, potentially reshaping industry standards and societal norms around technology and its application.

Globally, HBCUs' focus on ethical AI can catalyze the development of technologies that are responsible and beneficial for all humanity. Their commitment to ethics in AI, coupled with active participation in international research and policymaking, can position these institutions as moral compasses in the global AI dialogue. This leadership can lead to groundbreaking international collaborations, setting the stage for HBCUs to influence global AI policies and standards.

By pursuing these goals, HBCUs do not merely enhance their educational offerings; they also contribute significantly to society, the nation, and the world. Their unique position enables them to champion diversity and ethics in AI, equipping a new generation of professionals to navigate the complex landscape of future AI developments. This comprehensive approach ensures that AI advances under the guidance of principles that honor inclusivity, innovation, and ethical responsibility.

Recommendations and Activity Prioritization

This comprehensive evaluation of AI strategy and implementation at HBCUs demonstrates that adopting a tailored approach to AI integration is crucial. In terms of garnering the resources to operationalize strategy, financial sustainability can be achieved through diversified funding sources, including federal grants, private donations, and by leveraging alumni networks. Investing in faculty development and recruitment is also essential for delivering high-quality AI education at the program and course levels, particularly in supporting students in ethical uses of AI.

Professional development can look like creating a living recommended reading list that will provide comprehensive knowledge to all stakeholders involved, particularly as AI continues to evolve. Furthermore, building strong connections with local communities and industries will not only support HBCUs but also foster mutual growth and innovation. These connections extend to the wider community, where maintaining a global perspective on AI

discussions and standards ensures HBCUs contribute significantly to the broader AI conversation. Breaking down these strategies in ways that position HBCUs to lead in AI education and ensure their students are well-equipped for future challenges and opportunities in AI can take a wide variety of formats.

Below, find a series of prioritized strategic activities that will help HBCUs develop their AI strategy:

- **Curriculum Development and Approval (Year 1)**
  High Priority: This sets the academic foundation for everything else.
- **Faculty Hiring and Training (Year 1-2)**
  High Priority: Quality faculty are crucial for delivering a robust AI education.
- **Resource Allocation and Infrastructure Setup (Year 1- 3)**
  Medium Priority: Necessary but can be staggered over time as funding becomes available.
- **Funding and Grant Applications (Ongoing)**
  High Priority: An ongoing task to maintain and grow the programs.
- **Industry Partnerships (Year 2-4)**
  Medium Priority: Important for practical training and job placements but dependent on having a solid curriculum and faculty in place.
- **Community Outreach and Education (Year 2-5)**
  Low Priority: Important for long-term sustainability but not immediate.
- **Global Engagements and Conferences (Year 5-10)**
  Low Priority: Long-term goal that will naturally evolve from a robust program.

Rationale

Understanding the rationale for the recommended solutions in AI education at HBCUs reveals a multi-faceted approach to fostering academic excellence. At the core, a well-structured curriculum is indispensable, laying the foundation for student readiness in the burgeoning field of AI. However, the most meticulously planned curriculum requires robust funding to bring it to fruition, as financial support is essential for securing resources, hiring quality faculty, and enabling research opportunities. Furthermore, the engagement of quality educators is vital, as they animate the curriculum, making complex AI concepts accessible to students.

Practical training, facilitated through strategic partnerships, enhances job readiness while potentially opening additional funding channels. Beyond the classroom, engagement with the broader community and global initiatives is critical, contributing to societal advancement and positioning HBCUs as leaders in AI education. This comprehensive strategy underscores the necessity of integrating theoretical knowledge with practical experience and community involvement to prepare students for the challenges and opportunities that lie ahead in AI.

By adopting these recommendations and focusing on the prioritized activities, HBCUs can position themselves as leaders in AI education. Not only does this benefit the institutions themselves, but it also serves the broader goals of promoting diversity in tech, advancing scientific research, and preparing a workforce capable of navigating an AI-driven future.

Call to Action

HBCU leaders are encouraged to focus on these strategic directives to ensure their institutions play a pivotal role in AI's future:

- **Establish Short-Term Foundations**: Prioritize curriculum development and faculty training to set the academic groundwork for AI excellence.
- **Expand Mid-Term Collaborations**: Solidify partnerships with industry for research and job placements, enhancing practical training and diversity within AI fields.
- **Vision for Long-Term Impact**: Aim for global leadership in AI ethics and policy discussions, contributing to international standards and groundbreaking research.

Conclusion

HBCUs are not merely educational institutions; they are vibrant communities with deep-rooted histories and traditions. By convening all stakeholders and community members in dialogue focused on AI strategy, arranging networking events, and fostering a research culture, HBCUs can establish a strong and interconnected AI community. This community, anchored by a shared educational and ethical philosophy, can emerge as a powerful influence in shaping the AI landscape for the better.

Additionally, many HBCUs have a legacy of promoting a liberal arts education, focusing on the holistic development of the student (Roebuck & Murty, 1993). This aligns well with the multidisciplinary nature of AI, which combines elements of mathematics, computer science, ethics, and even sociology. A report by Stanford's Institute for Human-Centered Artificial Intelligence emphasizes the need for an interdisciplinary approach to AI education (Stanford HAI, 2019). The focus is not just on imparting technical skills but also emphasizing ethical considerations, soft skills, and an ability to collaborate across sectors. As AI continues to permeate every aspect of society, the role of educational institutions in preparing future generations becomes even more critical. HBCUs, with their unique position and historical mission, are poised to be vital players in this transformation. By adopting a multi-faceted approach that includes curriculum development, industry collaborations, and a focus on holistic education, they can help sculpt a future where AI is as diverse and inclusive as the communities it serves.

In a world where AI will undoubtedly play a pivotal role, the question should not only be how to adapt to this technological revolution but who gets to lead it. HBCUs have a unique opportunity to ensure that the narrative surrounding AI is as diverse, equitable, and inclusive as the technology itself promises to be.

Afterword

Dr. Cristi Ford

Chief Academic & VP of Academic Affairs at D2L

As a proud graduate of a historically Black university and a professional dedicated to the advancement of online learning, I am deeply committed to ensuring that HBCUs are not merely participants but leaders in the digital transformation era. Our world is increasingly driven by technology, and as we stand on the brink of major advancements in artificial intelligence, it is essential that HBCUs are not just included, but are central to this evolution. The legacy of HBCUs as pillars of African American excellence and achievement is well-documented and deeply respected; however, to maintain and enhance this legacy, they must actively engage with and contribute to the field of AI.

The digital age presents unique challenges and opportunities for HBCUs. These institutions have historically been cradles of innovation and resilience, yet they face significant barriers due to resource constraints and underrepresentation in tech fields. This disparity is not just a challenge but a call to action to bridge the gap in AI talent, leadership, and innovation emanating from minority communities.

To thrive in this digital landscape, HBCUs must adopt a multifaceted approach. This includes integrating AI and machine learning curricula, fostering industry partnerships to provide practical experience, and securing funding for cutting-edge research. Moreover, it involves creating ecosystems that support the holistic development of students, faculty, and the surrounding communities to understand, utilize, and innovate with AI technologies.

By leveraging their unique positions as cultural and educational hubs, HBCUs can produce graduates who are not only tech-savvy but also culturally competent, ready to address the ethical, social, and economic implications of AI. This is about more than just staying relevant; it's about leading the charge towards a more inclusive, equitable, and innovative future.

In my current role and throughout my career, I have witnessed firsthand the transformative power of technology in education. I am committed to leveraging my experiences to advocate for and support HBCUs in their journey toward digital excellence. Together, we can ensure that HBCUs are at the forefront of AI education and innovation, shaping the technology landscape and ensuring it reflects the diversity and richness of our society.

Mr. Omari Ross

Director at Adaptix Corporation and AI Entrepreneur

It is increasingly recognized within our society that artificial intelligence (AI) is not merely a transient technological trend but a fundamental force poised to shape our future. For many, the mention of AI conjures images of sophisticated consumer applications like ChatGPT, which have seamlessly integrated into our daily lives, offering convenience, and enhancing personal productivity. While the allure of consumer AI is undeniable, its applications represent only the surface of AI's potential impact. As we stand at this technological crossroads, it is imperative, especially for the Black community, to broaden our perspective beyond consumer-oriented solutions and delve into the realm of Industrial AI. This shift in focus is crucial not only for advancing our technological prowess but also for ensuring our meaningful participation in shaping the technologies that will underpin the global economy.

The urgency of this pivot is further underscored by recent government initiatives. Legislative and policy frameworks such as the Semiconductor Bill, Green Bill, Broadband Bill, and the Technical Hiring Mandate underscore a national commitment to reinforcing the United States' technological infrastructure and competitive edge. These measures are not mere policy adjustments; they are clear indicators of the strategic importance placed on AI and advanced manufacturing technologies. They signal a collective acknowledgment that AI's role extends far beyond consumer convenience, serving as a critical component of our national economic and security infrastructure.

Against this backdrop, historically Black colleges and universities (HBCUs) are uniquely positioned to lead this transformative journey. By fostering an educational environment that transcends traditional consumer AI applications, HBCUs can empower their students to become architects of the future Industrial AI landscape. This entails a curriculum that not only covers the theoretical underpinnings of AI but also provides hands-on experience with real-world industrial data sets and systems.

The transition from consumer AI to Industrial AI represents a significant leap. Industrial AI involves complex systems that manage and optimize manufacturing processes, supply chains, and energy distribution, to name a few. To prepare students for this leap, HBCUs must integrate access to real data sets and industry partnerships into their programs. This approach will equip students with the practical skills and insights needed to navigate and shape the industrial AI domain effectively.

Immersive learning experiences that mimic industrial environments are essential. Students should engage with projects that reflect the complexities of real-world industrial AI applications, from predictive maintenance to operational optimization. Such experiences will not only solidify their understanding of AI's technical aspects but also its strategic applications in various industries.

The shift towards Industrial AI demands a deep dive into the intricacies of data analytics, machine learning, and the integration of AI into physical systems. HBCUs can play a pivotal role in demystifying these complexities by fostering a learning environment that encourages innovation, critical thinking, and problem-solving.

Preparing students for the industrial AI landscape requires a holistic educational approach that balances technical knowledge with soft skills such as leadership, ethical decision-making, and collaborative problem-solving. HBCUs must cultivate an ecosystem that not only imparts knowledge but also instills the confidence to innovate and lead in the industrial AI sector.

As we embrace the AI-driven future, the role of HBCUs in preparing the next generation of leaders in this field cannot be overstated. By shifting the focus from consumer AI to the vast potential of industrial AI, HBCUs can ensure their students are not only participants in the digital economy but pioneers shaping its future. This strategic pivot is not just about staying relevant; it's about leading the charge in the technological evolution that will define the global economy for generations to come.

Dr. Anthony Holloman

Southern Intercollegiate Athletic Conference (SIAC)

It is with great pleasure and enthusiasm that I extend my full support to the guidebook, "Leading the AI Revolution: The Crucial Role of HBCUs in Steering AI Leadership," a joint publication of the Online Learning Consortium, WICHE Cooperative for Education Technologies, Complete College America, National Association for Equal Opportunity in Higher Education, and the Thurgood Marshall College Fund. As the Commissioner of the Southern Intercollegiate Athletic Conference (SIAC), I am deeply committed to advancing opportunities for HBCUs in all spheres of education and innovation. The integration of AI into various facets of society presents both unprecedented opportunities and challenges, including its impact on HBCU sports. HBCU sports programs have long been a source of pride and community engagement, serving as a platform for student-athletes to showcase their talent and represent their institutions on a national stage.

With the rise of AI technologies, there is immense potential to enhance the performance, safety, and overall experience of HBCU sports. AI-powered analytics can provide coaches and athletes with valuable insights into player performance, opponent strategies, and game dynamics, enabling them to make data-driven decisions that optimize training regimens and game strategies. Additionally, AI-driven injury prevention technologies can help identify and mitigate potential risks, ensuring the health and well-being of student-athletes both on and off the field. Moreover, AI has the potential to revolutionize the fan experience, offering personalized content, immersive viewing experiences, and interactive engagement opportunities that transcend traditional boundaries.

From virtual reality-enhanced game broadcasts to AI-powered chatbots that provide real-time updates and statistics, the possibilities for enhancing fan engagement are endless. By embracing AI technologies, HBCU sports programs can position themselves at the forefront of innovation, attracting top talent, fostering competitiveness, and elevating their visibility on a national and international scale. However, to fully realize these benefits, it is essential that HBCUs take a proactive approach to integrating AI into their sports programs and leveraging the expertise and resources available through partnerships and collaborations. The guidebook serves as a valuable resource for HBCUs seeking to navigate the complex landscape of AI and harness its potential to drive excellence in education, sports, and beyond. I commend the collaborative efforts of the Online Learning Consortium, WICHE Cooperative for Education Technologies, Complete College America, National Association for Equal Opportunity in Higher Education, and the Thurgood Marshall College Fund in advancing this important initiative and pledge my unwavering support towards its dissemination and implementation.

Glossary of Terms

Algorithmic bias: The tendency of AI systems to make decisions or predictions that are prejudiced due to flawed assumptions in the algorithm or bias in the training data.

Artificial intelligence (AI): The simulation of human intelligence processes by machines, especially computer systems. These processes include learning, reasoning, and self-correction.

Big data: Extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions.

Computational thinking: A problem-solving process that involves expressing problems and their solutions in ways that a computer could execute.

Curriculum development: The process of planning, implementing, and evaluating the instructional course designed for students, in this context, specifically tailored to incorporate AI education within HBCUs.

Cybersecurity: The practice of protecting systems, networks, and programs from digital attacks, aimed at assessing, changing, or destroying sensitive information, extorting money from users, or interrupting normal business processes.

Data governance: The system of internal policies that organizations use to manage, access, and secure enterprise data.

Data privacy: The aspect of information technology that deals with the ability an organization or individual has to determine what data in a computer system can be shared with third parties.

Deep learning: An advanced type of machine learning that involves neural networks with many layers, enabling the computer to learn complex patterns in large amounts of data.

Digital divide: The gap between individuals who have access to modern information and communication technology, and those who do not, often due to socio-economic factors.

Digital literacies: A series of competencies, skills, and abilities that reflect the ability to locate, assess, communicate, and create information safely and responsibly using digital tools, media, and spaces.

E-Learning: Learning conducted via electronic media, typically on the Internet, enabling the delivery of education and training programs to a wide range of learners across different locations.

Ethical AI: The practice of designing, developing, and deploying AI systems in a manner that respects ethical principles and values such as fairness, accountability, and transparency.

Historically Black colleges and universities (HBCUs): Institutions of higher education in the United States that were established before the Civil Rights Act of 1964 with the intention of primarily serving the African American community.

Inclusive technology: Designing and developing technology solutions that consider the diverse needs and experiences of all users, including those from underrepresented or marginalized groups.

Machine learning (ML): A subset of AI that involves the development of algorithms that can learn and make predictions or decisions based on data.

STEM: An acronym for Science, Technology, Engineering, and Mathematics, referring to these fields of study and their importance in education and workforce development.

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Additional Resources

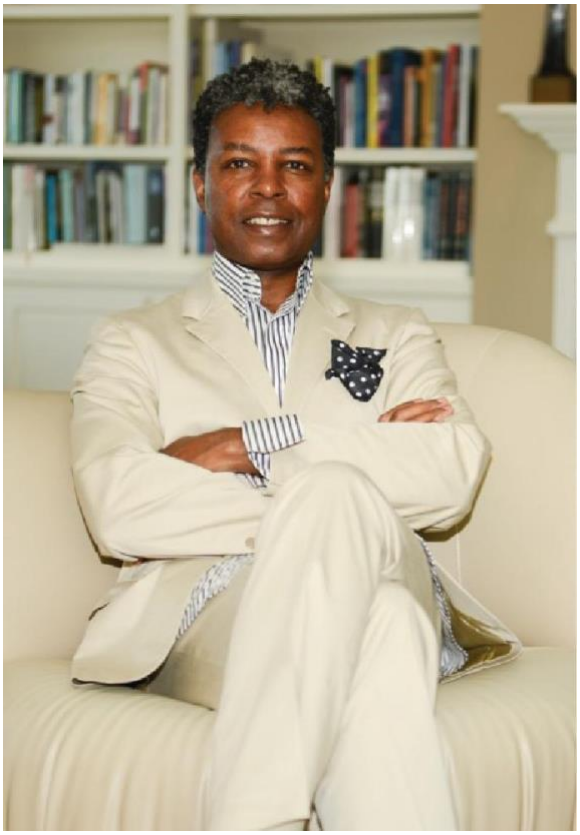
OLC Framework for Comprehensive Design, Equitable Implementation, and Continuous Improvement of AI Strategy
A holistic resource for empowering education through the ethical and inclusive integration of generative AI.
https://onlinelearningconsortium.org/read/olc-framework-for-ai-strategy/

AI Education Policy and Practice Framework
Adapted from the research conducted by Cecilia Ka Yuk Chan and the AI Ecological Education Policy Framework, which addressed "the multifaceted implications of AI integration in university teaching and learning," WCET has created a new framework for institutions to develop policies related to AI in higher education.
https://wcet.wiche.edu/resources/ai-education-policy-practice-ecosystem-framework/

Attainment with AI: Making a Real Difference in College Completion with Artificial Intelligence
This playbook lays out the potential of using AI to equalize and scale access to a college degree and the accompanying individual, economic, and societal benefits.
https://completecollegeamerica.s3.us-east-2.amazonaws.com/wp-content/uploads/2024/01/05140909/CCA_AttainmentwithAI.pdf

The AI Divide: Equitable Applications of AI in Higher Education to Advance the Completion Agenda
This paper on AI and equity in higher education offers specific steps that institutions and policymakers can take to increase college attainment and close national racial and socioeconomic gaps.
https://completecollegeamerica.s3.us-east-2.amazonaws.com/wp-content/uploads/2023/11/05141059/CCA_The_AI_Divide.pdf

About the Cover Artist



Jonathan Green is a distinguished American painter and printmaker renowned for his vibrant, expressive works that document the rich cultural heritage of the Gullah Geechee community in the Lowcountry region of South Carolina and Georgia. Born in 1955 in Gardens Corner, South Carolina, Green's upbringing in this unique cultural enclave profoundly influenced his artistic vision and thematic focus. Green's artwork stands out for its vivid color palette and dynamic compositions, capturing the essence of daily life, cultural traditions, and spiritual beliefs of the Gullah Geechee people. This community, descended from Central and West African ancestors, has maintained much of its African heritage due to the isolation of the coastal areas where they were enslaved. Jonathan Green's art serves as a visual testament to their resilience, traditions, and profound connection to both the land and the maritime environment that surrounds them.

Educated at the School of the Art Institute of Chicago, Green's academic and professional journey has been dedicated to portraying the untold stories and rich heritage of African diasporic communities. His works not only celebrate the unique identity and customs of the Gullah Geechee people but also aim to educate and inspire a broader audience about the significance of preserving such a distinctive cultural heritage. Green's contributions go beyond his artwork. He is actively involved in community initiatives and educational programs aimed at preserving the Gullah Geechee culture.

His art has been exhibited in major galleries and museums across the United States and internationally, earning him numerous accolades and recognition as a pivotal figure in contemporary African American art. Through his art, Jonathan Green plays a crucial role in documenting and celebrating the maritime history and cultural legacy of African diasporic people, with a specific focus on the Lowcountry Gullah Geechee communities. His work not only adds a crucial chapter to the narrative of American art but also serves as a vibrant bridge connecting the past with the present, ensuring the continuation and appreciation of a rich cultural heritage.

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