TECHPOINT

June 2024

Artificial Intelligence and the Indiana Workforce

A Swift and Pervasive Transformation

Researchers are encouraged by Hoosier companies' recent uptick in AI implementation in recent months and plans for training and upskilling.

Dennis Trinkle, Ph.D. Hesham Mohamed Allam, Ph.D. Melissa Booth, MS

Artificial intelligence will be the most significant driver of innovation and digital transformation businesses have ever witnessed. Coupled with pervasive networks and big data implementations, AI tools will unlock unlimited product and service innovation and potentially fuel dramatic productivity increases. Realizing this immense potential requires more than a frantic rush to adopt the latest technologies. It demands a deliberate focus on practical, solution-oriented approaches and innovative thinking. Business leaders must possess a deep understanding of current market dynamics to make informed decisions, while individuals require solid guidance to navigate the evolving landscape of future workforce needs. Hats off to TechPoint for working with stakeholders across sectors and roles to provide invaluable advice addressing both needs."

→ **Jeff Ton, Founder, Indiana CIO Network**

Introduction

The recent exponential progress in artificial intelligence (AI) development is a watershed moment, poised to redefine industry landscapes and the fabric of our economy, education systems and employment paradigms. As businesses, policymakers and workers grapple with the ramifications of this unprecedented technological leap, it is essential they understand the profound reshaping AI will bring in the near term.

National research suggests AI is already catalyzing business transformation and impacting the workforce faster than any previous technology. The McKinsey Global Institute's July 2023 report, ***Generative AI and the Future of Work***, suggests that by 2030, AI could increase corporate revenue by $2.3 trillion.

Increased productivity and shifts to a high-skilled workforce could elevate U.S. Gross Domestic Product (GDP) by 0.5 to 1.0 percentage points annually through 2030. These potential gains are already driving heavy investments in AI. Crunchbase's March Venture Capital (VC) Update noted that $4.7 billion — more than one-fifth of all VC funding — went to companies investing in AI in February 2024. ***MIT Review*** projects that as many as 10,000 AI-related start-ups may be launched annually in the U.S. through 2030.

Corporate investment has been equally robust. A February 2024 Gartner report predicts U.S. corporate AI spending will grow by $19.1 billion in 2024. As Info-Tech's landscape analysis below demonstrates, organizations that adopt AI will gain a competitive advantage.

AI could drive increased corporate revenue by **$2.3 trillion** by 2030

AI innovation and adoption will demand new skills of incumbent workers and education and training for early career professions in novel skills and competencies.

AI is expected to impact 85 percent of workers within the next three to five years.

Most workers could see up to 50 percent of their professional skills impacted by AI.

30 percent of hours presently worked could be fully automated by 2030.

Organizations that adopt generative AI will gain a competitive advantage

Organizations adopting AI are outperforming their competitors

Organizations who implemented AI and automation are:

more likely to report high organizational performance (n=299)

more likely to report high ability to change at scale (n=296)

more likely to report high ability to generate new ideas (n=299)

(McLean & Company, HR Trends Survey 2022)

Research In Practice

Blockbuster is a commonly cited example of a once-dominant company that dismissed emerging technology. In the year 2000, Blockbuster had the opportunity to partner with Netflix, which would manage the brand's online presence. Blockbuster declined the proposal and ultimately went bankrupt in 2010. A significant factor in Blockbuster's decline was the rise of streaming services, like Netflix, and digital downloads, in addition to the company's failure to adapt its business model in response to consumer demand. Organizations must prepare to adapt to new technologies or risk falling behind.

AI integration increases productivity in the workforce

Organizations who implemented AI and automation are **20%** more likely to report high workforce productivity

(McLean & Company, HR Trends Survey 2022, n=300).

Generative AI use in organizations has been shown to improve productivity by an average of **66%**, with the largest productivity improvements in complex tasks, e.g. coding

(Nielson Norman Group, 2023).

Generative AI improves task completion

Large language models (LLMs) such as ChatGPT will enable approximately **15%** of all work tasks in the US to be completed faster with the same quality

(Eloundou et al., 2023).

When employees use LLMs that are embedded into enterprise systems, the number of tasks that can be completed faster with the same quality increases to as much as **56%**

(Eloundou et al., 2023).

AI and the future of work

The future of work with AI holds significant potential to transform various aspects of the organization, its products and services, and the roles of employees.

Improved Services

- Enable intelligent automation, personalized interactions, and faster response times.
- AI-powered chatbots and virtual assistants can provide instant support and information.

Enhanced Decision-Making

- By analyzing large volumes of data, AI/ML can help to uncover patterns, detect trends, and provide insights.
- Use AI systems to extract insights and identify patterns.
- Informed and effective decision-making processes.

Efficient and Automated Processes

- Streamline processes by automating repetitive tasks, optimizing workflows, and reducing inefficiencies.
- Robotic Process Automation (RPA) can be used to automate routine administrative tasks, reducing errors and improving efficiency.

Collaborative AI Systems

- Generative AI systems facilitate collaboration and knowledge-sharing among employees.
- Provide real-time access to a knowledge management system, best practices, and case studies.

The most affected operational areas will involve robotics and engineering, language programmers, machine learning and AI, data analytics and statistics, cybersecurity, and computer vision and image processing.

Software developers, IT support technicians, business development representatives, systems analysts and engineers, computer and information systems managers, cybersecurity specialists, computer occupations and general operations, product owners, business and data analysts and project managers will be the most affected job roles.

The least impacted areas will include those with heavy human interaction, emotional intelligence and hands-on technical roles, such as field technicians, skilled trades and emerging roles, such as electric vehicle technicians.

However, generative AI adoption will disrupt organizations by reshaping roles and shifting talent requirements

Reshaping roles → Shifting talent requirements

Generative AI will automate tasks, changing the work that makes up existing roles.

of workers in the US may have a minimum of **10%** of their tasks impacted by AI models such as ChatGPT (Eloundou et al., 2023).

of the workforce could have **50%** of their tasks automated by generative AI (Eloundou et al., 2023).

As roles are reshaped with organizational generative AI adoption, new skills will be required for role incumbents.

of business leaders in the US consider previous ChatGPT experience a valuable skill (Resume Builder, 2023).

of the workforce will need reskilling because of AI adoption (IBM, 2023).

By reshaping roles and shifting talent requirements, generative AI will impact workforce composition

of individuals expect little or no change in the number of employees in their organization's workforce in the next three years due to AI adoption, while **43%** of individuals expect reductions, and **15%** expect an increase in the size of their organization's workforce ("The state of AI," McKinsey & Company, 2023).

How individuals spend their work hours and the skills they focus on will change significantly for many occupations, though, to different depths and at various paces. As a result, McKinsey projects that automation will prompt 12 million occupational transitions by 2030 and will slant toward higher-skilled, higher-paid jobs. New hiring and talent strategies will be essential to address the pressing need for talent with new skills needed for the AI shift. National analysts anticipate most employers will need to:

- Shift from hiring based on degrees and credentials to hiring focused on skills to ensure workers have necessary AI-related abilities and competencies;
- Place a strong emphasis on developing internal talent, collaborate with third-party talent partners; and
- Recruit from historically overlooked populations (such as rural workers, people with disabilities, or who are neurodivergent, and from minority groups.)

Microsoft's Chief Scientific Officer Eric Horvitz has described the current AI transformation as a "phase change"- an almost instantaneous shift from one technology state to another with little transition. Few organizations or individuals will experience AI transition that abruptly, however. Many variables include talent and skill gaps, regulatory and policy variations, human resistance and lack of market clarity. As with prior general-purpose technologies, there will be stages and transitions across AI adoption. Adoption will vary by geography, sector and role.

In Indiana, the pace of AI adoption will be guided by all these variables and will be highly mixed through 2030. Within that variable context, the pace of change will be faster than anything organizations and individuals have experienced before and will create pressure for organizations of all types to innovate and adapt to remain competitive and market-worthy.

> The pace of change caused by AI will be faster than anything organizations and individuals have experienced before."

In human terms, this will inevitably create instability and uncertainty in many directions. We believe corporate leaders, policymakers and workers require guidance on critical short-term and long-term implications. Informed by an extensive national literature review and structured interviews with Indiana leaders and workers, this report seeks to provide that guidance and thereby reduce negative pressure resulting from the inevitable – and, in our opinion, positive – AI transition. In it, we:

- Offer guidance for corporate leaders, managers, HR professionals, policymakers and workers on what is happening across sectors and occupations in Indiana.
- Define the skills that will be impacted by AI and to what degree.
- Identify the skills workers need and the upskilling, reskilling, and cross-skilling support employers must provide to ensure their workforce has the abilities required by their business demands.

AI is reshaping the U.S. workforce's landscape, presenting opportunities and challenges.

As noted in the introduction, the McKinsey Global Institute's July 2023 report anticipates that more than 12 million job transitions will be needed by 2030. This will demand a focused and well-calibrated near-term focus on upskilling and retraining workers into evolving jobs with new tasks and skill requirements. This will especially be true for lower, skilled, and entry-level roles, which are particularly vulnerable to AI automation.

The Pew Research Center found that in 2022, nearly 5.8 million women and 3.6 million men were employed in five occupations with job tasks facing heavy exposure to AI automation, including sales representatives, lawyers, couriers, accountants and other computer-related occupations. Similarly, LinkedIn research shows that financial services and retail professionals adopt AI skills faster, while education and consumer services professionals show the slowest growth nationally.

Deloitte's study, *The Impact of Artificial Intelligence on the U.S. Workforce*, reinforces these findings, noting that "automation will disproportionately affect low-wage, less-educated workers, potentially exacerbating income inequality."

The primary impact for workers will be about skills, rather than roles:

While some evidence and anecdotes suggest that some firms are considering using AI to replace entire jobs or categories of jobs now held by human workers, there is a growing consensus that AI's impact will instead be felt more at the level of individual tasks. In recent months, analysts have been working to better understand and predict that impact, often by quantifying the number of work hours or tasks that could be automated or impacted by AI. McKinsey and Info-Gard Research Group note that the primary impact on workers will be on skills and functions rather than roles. Most workers will find a percentage of their skills and tasks impact in the next three years, opening the possibility of reshaping and augmenting their work.

A recent study by JFF Labs developed a rigorous and detailed methodology for linking tasks to skills and defining roles by foundational and technical skills. JFF's first research report, published in November 2023, clearly shows that most roles will be impacted only partially and primarily at the skill and task level across sectors and occupations. We use the JFF methodology later in this report to analyze the impact on the Indiana workforce, and JFF's methodology is explained in the appendices.

Skill shifts and reskilling needs:

Our analysis and additional research show the importance of reskilling programs to meet the challenges of the AI transition. As organizations turn to AI to automate more tasks, workers must have or must develop skills that complement AI technology. This skilling, re-skilling, and upskilling activity must begin now because of the widening gap between current and future skills.

Gartner projects that by at least 2030, no more than 25 percent of needed AI-related talent will be available. That shortage of skilled talent will extend to third parties, which means that employers will not only lack the skilled workforce they need but also

find it difficult to import that skilled talent. To combat these ubiquitous challenges, employers of all sizes and across sectors must develop robust internal training programs and rely on work-and-learn programs through partnerships.

Sector-specific Impact:

The impact of AI on different sectors will vary, with specific sectors such as manufacturing, accommodation food services and retail experiencing higher automation potential. Sectors like finance and technology will experience productivity gains from AI adoption. Others, such as transportation and manufacturing, may face job displacement challenges.

Income inequality and labor market disparities:

The workplace disparity is not the only challenge the need for AI-upskilling presents. McKinsey and Deloitte found that AI adoption could exacerbate income inequality without interventions, with high-skilled workers benefiting disproportionately from productivity gains. Due to AI, rural areas and communities with lower educational attainment may be particularly vulnerable to job displacement, which is causing concern within the national workforce.

Worker concerns about AI

In its 2023 survey, *AI and the Future of Work*, JFF found that 58 percent of workers feel they need to gain new skills due to AI's impact and that about one-third feel they should do so within the following year. In contrast, about 42 percent did not feel the need to upgrade their skills.

Workers who feel they need to upgrade their skills due to AI:

43% of Baby Boomer workers

52% of Gen X workers

66% of Gen Z and Millennial workers

49% of women

64% of men

Nearly 60 percent of adults believed AI-related learning opportunities should be offered to workers. More than half of learners said they would feel more prepared for AI's future impact if they had learning tools for it. Many students now think AI will make it harder for them to get a job after school rather than creating more job opportunities in their field of choice.

Do you feel the need to gain new skills due to the impact of AI?

	Yes*	No
All Adults	58%	42%
Workers	58%	42%
Gender: Male	64%	35%
Gender: Female	49%	51%
Race/Ethnicity: White (Non-Hispanic)	55%	45%
Race/Ethnicity: Hispanic	62%	39%
Race/Ethnicity: Black (Non-Hispanic)	69%	31%
Race/Ethnicity: Asian + Other (Non-Hispanic)	59%	42%
GenZers: 1997-2012	66%	35%
Millennials: 1981-1996	66%	35%
GenXers: 1965-1980	52%	48%
Baby Boomers: 1946-1964	43%	57%

*Note: "Yes" includes the total sum immediately in the next 6-12 months, 3-5 years, and more than five years.

AI has matured rapidly, recently

1960s-1970s

Joseph Weizenbaum creates the ELIZA chatbot, which simulates conversations with a psychotherapist.

1980s-1990s

Deep learning techniques improve due to development of statistical models to make probability-based decisions, recurrent neural networks, and improvements in computational capabilities.

2000s-2017

Apple releases its first iPhone with Siri. The first generative adversarial network is developed.

2017-2021

A Google-based research team publishes ***Attention is All You Need***, a seminal paper for LLMs. Google releases BERT and OpenAI releases GPT-2.

2022-2023

OpenAI releases ChatGPT, which reaches 100 million active users two months after launch.

Indiana's journey: tracking with national trends

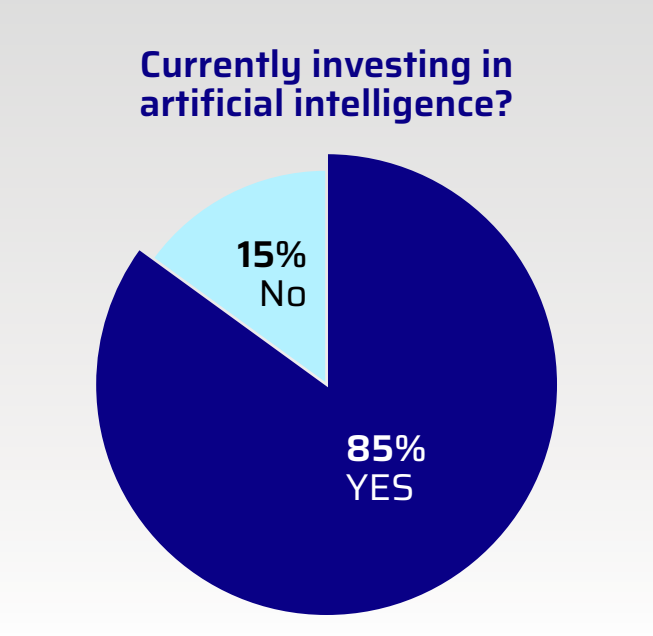
Insights from business leaders and workers across sectors in Indiana show the state is seeing rapid AI adoption and impact closely aligned with national patterns and forecasts.

Current status of Indiana company adoption of AI

In late 2023, the Central Indiana Corporate Partnership (CICP) worked with its colleagues at TechPoint and Conexus Indiana to undertake a survey of AI adoption in Indiana. More than 55 percent of respondents to that survey indicated their businesses have adopted AI, a share generally in line with McKinsey's Global AI Survey released just a few months earlier. The CICP survey and report focused on AI adoption. This report focuses on the impact of AI adoption on the workforce.

We again asked business leaders and workers about the current status of their AI adoption. As expected, given national trends, we found that developments are accelerating. The more than 100 participants in our cross-sector research study, including senior executives, hiring managers, and frontline workers in the tech and tech-powered ecosystem, indicated that 85 percent of their organizations are now adopting and investing in AI. Indiana is tracking closely with the national acceleration in AI adoption.

The increase in AI technology investment also indicates a broad-based commitment to leverage AI's potential benefits to catalyze innovation and sustain



or achieve competitive advantages. This commitment is underscored by the diverse representation of job roles actively engaging with AI initiatives.

Notably, AI adoption is being propelled strategically from executive leadership and organically by frontline workers and middle managers. The comprehensive spectrum of roles represented in our research, from executive leadership to sales and marketing, operations, human resources, research and development and other areas, highlights the holistic embrace of AI-driven transformation across organizational hierarchies.

Stages of AI adoption

Among the tech and tech-powered stakeholders who reported investing in AI:

- **55%** reported being in the exploration stage of AI adoption.
- **32%** indicated they are currently in the implementation stage.
  - Structured interviews suggest these companies have identified apparent problems and use cases for adoption and are proceeding with early-stage strategic implementations.
- **7%** reported having significantly adopted established AI tools.
- **6%** said their organizations are expanding, suggesting a stage where AI initiatives are being scaled up or broadened across various departments or functions.

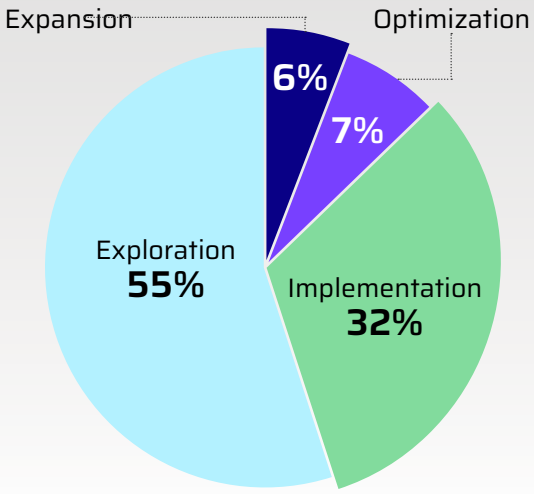
Interviews revealed that many organizations are simultaneously in multiple stages based on the AI tool. Many companies have well-established adoptions of machine learning, robotic process automation and other tools, and these companies are now exploring and experimenting with generative AI tools.

Productivity and profitability are the primary current drives for AI adoption

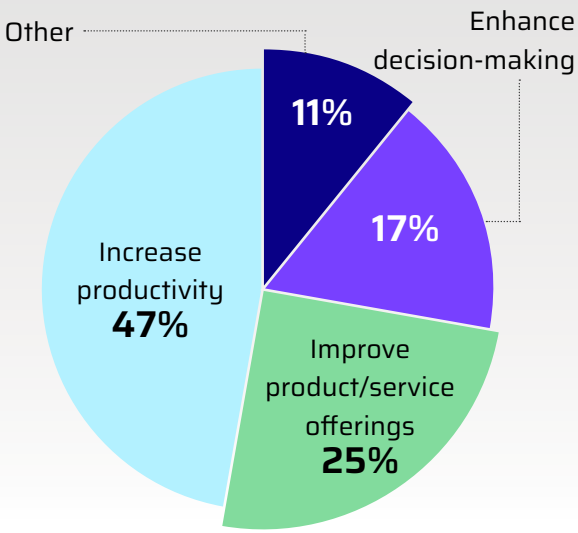
Interviews and stakeholder engagement reveal that a significant majority - 47 percent -have prioritized leveraging AI to boost employee productivity. A quarter are directing their AI efforts toward improving product and service offerings. Seventeen percent are focused on leveraging AI to augment decision-making processes.

These figures underscore a strategic alignment of AI initiatives with organizational objectives to enhance operational efficiency and competitiveness.

Stages of the integration of AI



Primary goal for adopting AI in your company

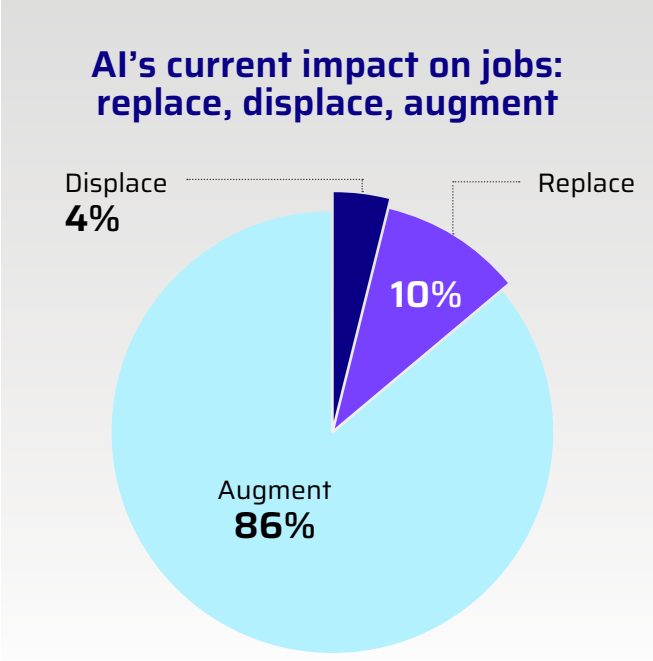


AI's current impact on jobs: replace, displace, augment

Stakeholder input and interviews reveal a nuanced perspective on the anticipated use of AI in the workforce over the next year. To assess this impact, we employed the methodology developed by JFF to evaluate the influence of AI on skills and occupations. This framework categorizes the potential effects of AI into three primary outcomes: replacement, displacement and augmentation.

Replacement suggests that AI will predominantly assume responsibility for a skill or role, leading human workers to no longer allocate time for those tasks. Augmentation indicates that AI will enable the accomplishment of tasks or occupations at a higher level or more efficiently, potentially requiring the same or an increased number of individuals in the role. Displacement represents a middle ground, wherein AI enhances the productivity and effectiveness of human workers to the extent that fewer workers are needed in that role. However, AI does not entirely assume the skill or occupation.

Applying this framework, 86 percent of respondents anticipate AI will augment their work, reflecting a belief in its potential to enhance productivity, streamline processes, and improve overall efficiency within organizations. This sentiment aligns with the high adoption rate of AI technologies previously reported, signaling a positive outlook toward integrating AI into various work aspects.



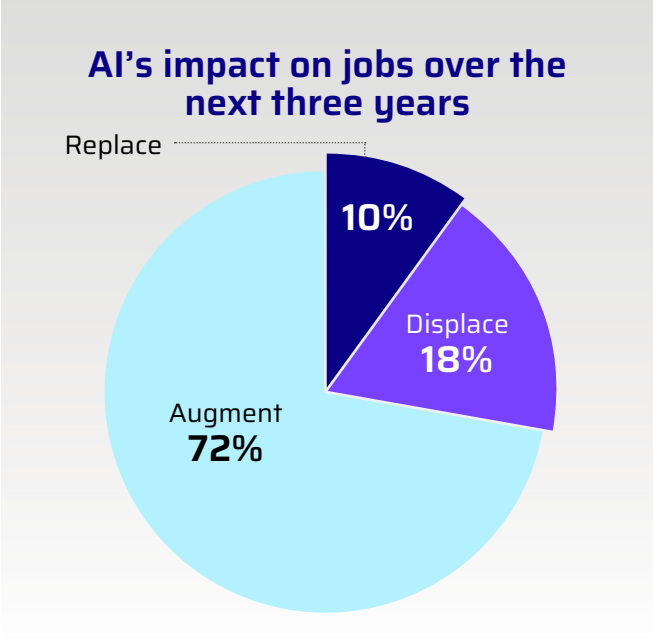
Ten percent of respondents foresee AI completely replacing specific tasks or roles within the workforce, and four percent expressed concerns about AI potentially displacing skills and roles. While currently relatively small, this percentage of the overall sentiment underscores the importance of proactive measures to address workforce transitions, implement upskilling initiatives, and consider ethics.

These findings underscore the relationship between AI adoption, workforce expectations and the necessity for organizations and policymakers to anticipate impact and develop training and development plans to harness AI's benefits while mitigating potential adverse effects on workers and society.

Anticipating AI's impact on jobs: replace, displace, augment over the next three years

The results regarding the anticipation of AI's role and impact on workforce strategy over the next three years offer further insights into the evolving landscape of AI integration. Most respondents anticipate AI will ***augment*** roles and skills, signaling a widespread belief in its potential to enhance organizational decision-making, analysis, and strategic planning.

However, 18 percent of respondents foresee that AI will ***displace*** specific roles, acknowledging the potential for automation and efficiency gains that may lead to changes in job functions. Additionally, the 14 percent of respondents who anticipate AI will ***replace*** roles and work for strategy over the next three years underscore the need to carefully consider workforce planning, reskilling initiatives and ethical implications surrounding AI deployment.



These results illuminate the complex dynamics involved as organizations navigate the integration of AI into strategic functions and highlight the importance of proactive measures to maximize AI's benefits while mitigating potential disruptions to the workforce.

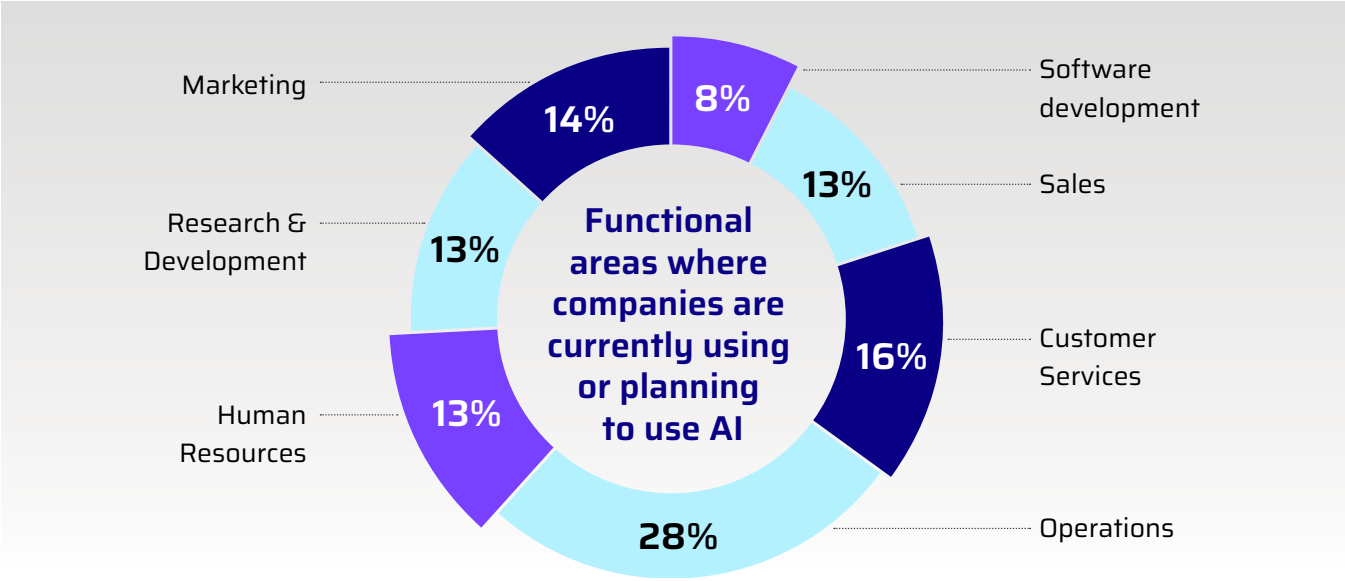
Functional areas where companies are currently using or planning to use AI

The breakdown of functional areas where companies currently use or plan to use AI shows that short-term implementation and impact of AI are anticipated in several specific areas. Based on this breakdown, it is expected that short-term implementation of AI will have a faster significant impact on specific areas.

Echoing national projections, Indiana leaders and managers anticipate the most significant short-term impact in six areas: operations (28 percent), customer service (16 percent), marketing (14 percent), and the following (13 percent): sales, human resources and research and development (R&D). In technical areas, the most significant immediate impact is anticipated in software development at eight percent, underscoring both the effectiveness of generative AI tools for software development and AI's role in enhancing development processes and creating more intelligent software solutions.

Interestingly, the progression from Operations to R&D suggests a concerted effort to leverage AI across multiple stages of product development and operational execution.

These findings reflect the broad spectrum of AI applications within organizations, emphasizing its versatility and transformative potential across various functions and matching national analyses that project AI's most significant near-term impact on software development, marketing, sales, customer operations, human resources, and research and development.



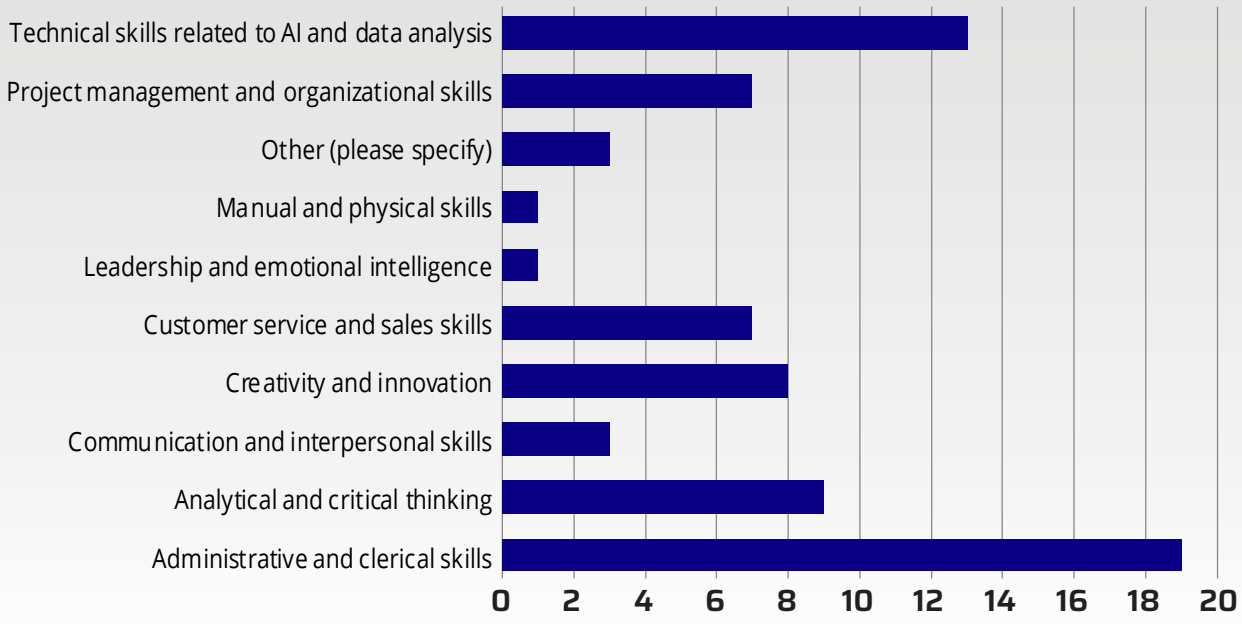
Foundational skills most impacted by AI

To gauge AI's impact on foundational skills, respondents were asked to assess its impact on the skills identified through TechPoint's process for annually identifying the most in-demand skills and tech occupations in Indiana.

Respondents anticipate that AI will be good enough at some tasks, such as information processing and data analysis, that it will become less important for humans to develop those skills. At the same time, the incredibly generative AI has the potential to augment durable skills such as communication, critical thinking and relationship-building in ways that make human workers even more effective but without replacing the need for human-to-human interaction, making it more crucial over time for workers to sharpen these capabilities.

In the short term, respondents see foundational skills impacted differently. Twenty-seven percent of respondents highlighted administrative and clerical skills as likely to change. Additionally, 18 percent expressed that technical skills related to AI and data analysis would be impacted. Moreover, 11 percent identified creativity and innovation skills as areas expected to see effects from AI integration. Thirteen percent indicated that analytical and critical thinking skills would be influenced. Ten percent said project management and organizational skills are likely to be impacted by AI.

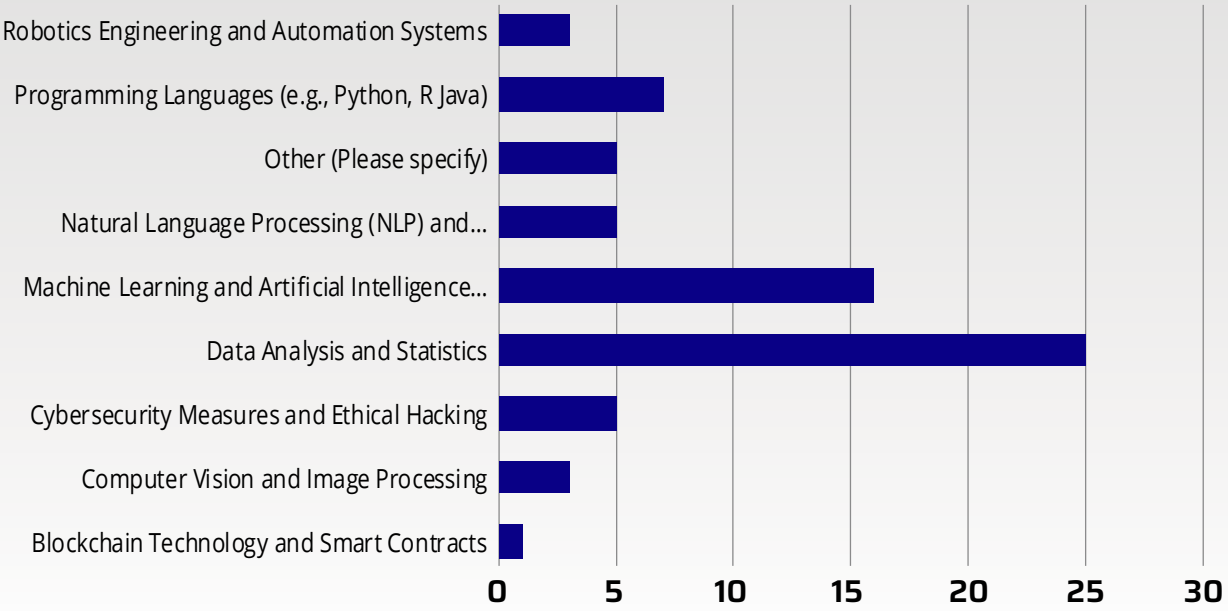
Foundational skills believed will be most impacted by AI



Technical skills most impacted by AI

Respondents identified a similarly mixed impact on technical skills. Twenty-three percent indicated that machine learning and AI algorithms would change. Ten percent mentioned programming languages as another area expected to be affected. Seven percent reported other technical skills that they believe will be influenced by AI integration. These findings provide valuable perspectives on the specific technical competencies likely to be affected by the increasing adoption of AI technologies across various industries.

Technical skills believed to be impacted by the integration of AI



Top 10 Indiana tech-related roles and skills impacted by AI

To analyze the impact of AI on the Indiana tech-powered roles, we adapted the JFF skills assessment methodology to look at the top 10 tech-related roles as representative of the larger landscape. In the chart below, we used stakeholder and JFF analysis of skills likely to be replaced, displaced (reduced in number), and augment. Under each of those columns, few skills means that few skills in the identified role are projected to be impacted by AI, some skills means that 30-50 percent of skills are projected to be affected by AI, many skills means 50 percent or more of skills in the role are projected to be impacted. The aggregate of these impacts suggests how hefty and broad the impact of AI will be on a particular role and how much training, reskilling, cross-skilling, and upskilling will be for that role.

	Top 10 tech-related occupations	Average % growth, 2022 – 2027	Typical entry education	Replace	Displace	Augment
1	Software developer	17.47%	Bachelor's degree	Few skills impacted	Many skills impacted	Many skills impacted
2	It support technician	7.80%	Some colleges, no degree	Some skills impacted	Some skills impacted	Many skills impacted
3	Business development representative	7.27%	High school diploma or equivalent	Few skills impacted	Some skills impacted	Many skills impacted
4	Systems analysts & engineers	9.10%	Bachelor's degree	Few skills impacted	Very important	Many skills impacted
5	Computer and information systems managers	12.55%	Bachelor's degree	Few skills impacted	Very important	Many skills impacted
6	Cybersecurity specialist	12.50%	Bachelor’s degree	Few skills impacted	Very important	Many skills impacted
7	Computer occupations, all others	9.71%	Bachelor's degree	Few skills impacted	Very important	Many skills impacted
8	General and operations managers/product owners	7.42%	Bachelor's degree	Few skills impacted	Some skills impacted	Many skills impacted
9	Business/data analysts	12.00%	Bachelor’s degree	Some skills impacted	Very important	Many skills impacted
10	Project management	8.11%	Bachelor's degree	Few skills impacted	Some skills impacted	Some skills impacted

Source: Based on the JFF Skills Mapping Methodology, the TechPoint Top 25 Jobs Report and Lightcast and Bureau of Labor Statistics Data

Perspectives on AI training, support, and workforce integration

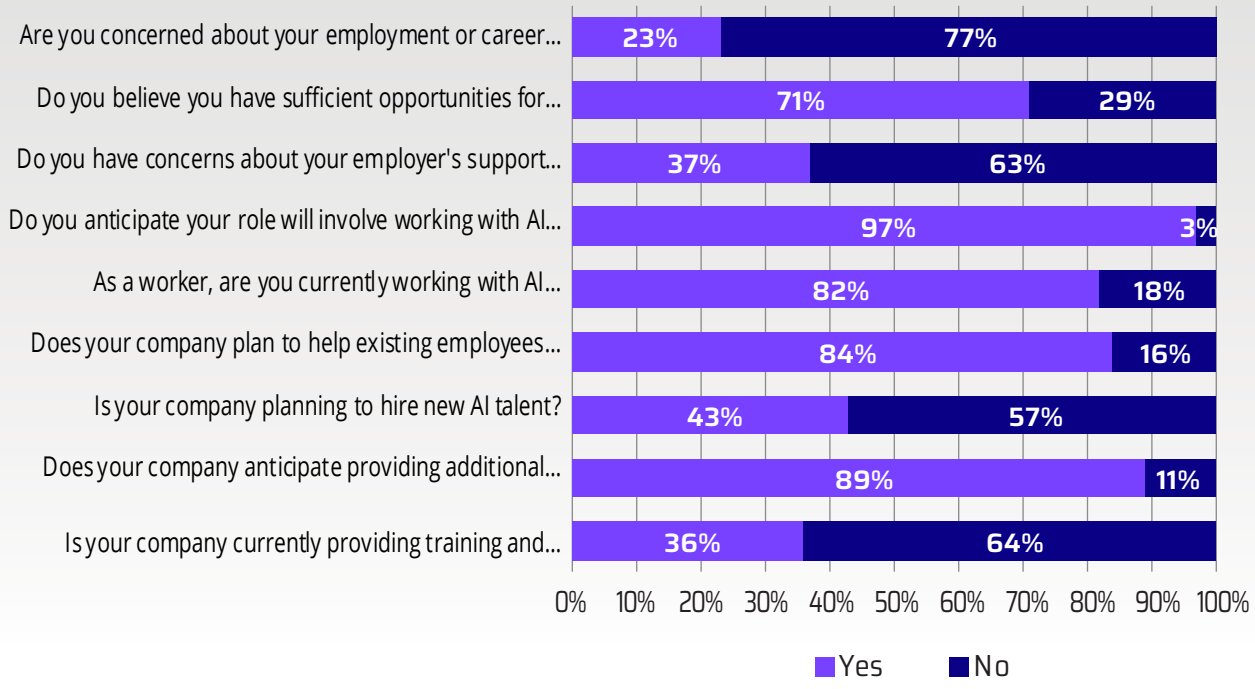
As shown above, the data reveals a notable disparity in the current provision of training and support for workers to adapt to AI within companies. More than 60 percent reported no training currently exists. We were encouraged, however, that more than 88 percent of companies with which we engaged are anticipating additional training and support for AI adaptation.

Similarly, about 57 percent of companies are not planning to hire new AI talent, but 84 percent expressed intentions to help existing employees develop AI-related skills.

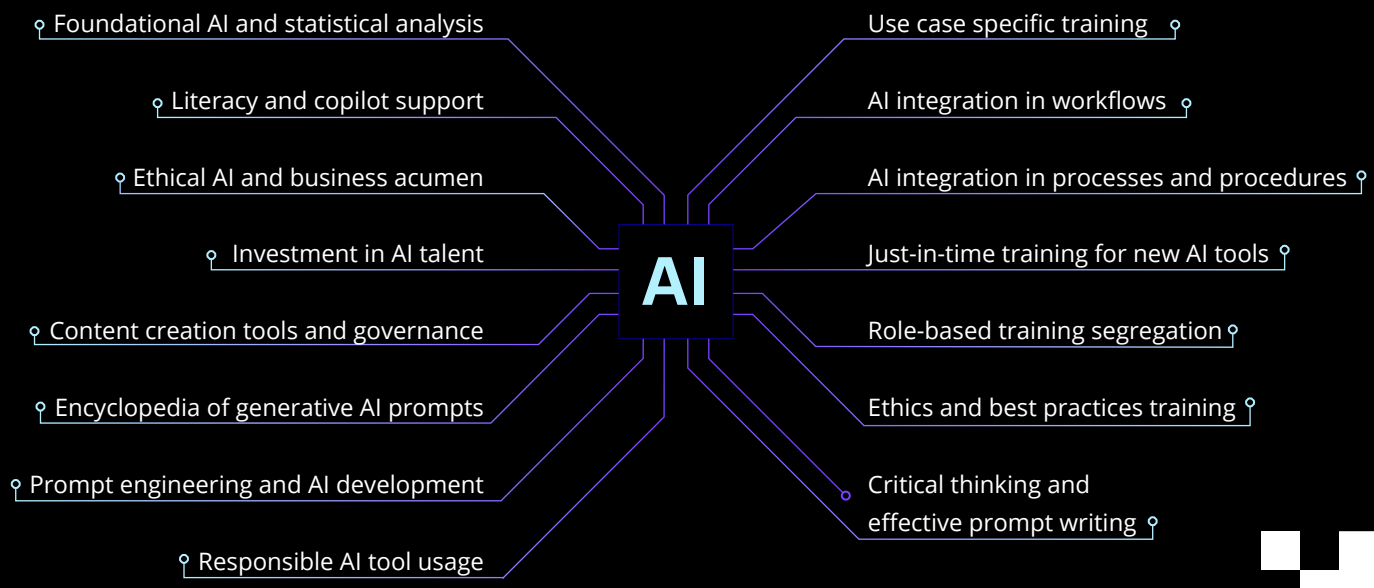
Nearly 82 percent of workers are engaged with AI technologies and almost 97 percent anticipate future involvement, reflecting the growing integration of AI across industries.

Most workers believe they have sufficient training and upskilling opportunities in AI and related areas. Still, more than a third of workers are concerned about the level of this essential training. Nearly 23 percent expressed concern about their employment or career progression over the next three to five years due to AI integration. These concerns about training and advancement illustrate the need for proactive measures to address workforce apprehensions and ensure smooth transitions in the evolving technological landscape.

Perspectives on AI training, support and workforce integration



Desired training and support that would help with adoption of AI



Desired training and support that would help with the adoption of AI

In feedback and conversations, Indiana leaders and frontline workers consistently emphasized 10 key types of training and support needed for AI adoption in organizations:

1. **AI Fluency and Use Support:** Prioritize initiatives that promote AI literacy and provide guidance, similar to a co-pilot, for effectively navigating AI technologies.

2. **Enhancing Prompt Engineering and AI Development:** Provide training to enhance prompt engineering skills and AI development capabilities, empowering employees to create and optimize AI systems effectively.

3. **Critical Thinking and Prompt Formulation:** Foster critical thinking skills among employees and proficiency in formulating effective prompts to optimize AI interactions.

4. **AI Talent Development Investment:** Invest in programs aimed at upskilling, reskilling, and cross-skilling incumbent talent to ensure that workers have the necessary expertise to leverage AI effectively and remain secure and valued within their organization.

5. **Content Creation Tools and Governance Protocols:** Provide tools for content creation alongside establishing governance protocols to ensure responsible and compliant AI usage.

6. **Tailored Training for Specific Use Cases:** Deliver training sessions tailored to specific use cases to address the unique needs and challenges associated with different applications of AI.

7. **Seamless Workflow Integration:** Focus on integrating AI seamlessly into existing workflows to minimize disruptions and maximize efficiency gains.

8. **Embedding AI into Processes and Procedures:** Develop strategies for embedding AI into organizational processes and procedures to drive consistent and standardized AI utilization.

9. **Business Acumen:** Offer training programs that enhance employees' business acumen to understand the broader implications of AI implementation.

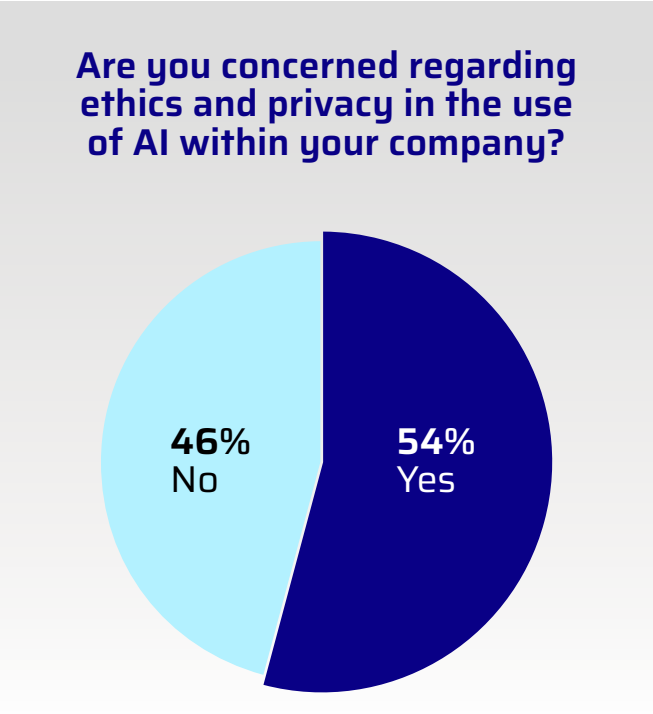
10. **Promoting Responsible AI Usage:** Educate employees on the responsible and ethical use of AI tools to mitigate risks and promote trust in AI technologies.

These initiatives reflect the top priorities identified by leaders and workers for training and support as organizations embrace AI adoption. Implementing just-in-time training for new AI tool adoption, role-based training segmentation and building foundational AI knowledge are crucial for comprehensive AI readiness across organizations.

Concerns regarding ethics and privacy in the use of AI within your company

The survey results regarding concerns about ethics and privacy in using AI within companies reflect a significant level of apprehension, with 54 percent of respondents expressing worries. There is a concern that AI might be adopted too quickly without a complete understanding of its implications. Misunderstandings about AI's capabilities and potential misuse are also mentioned as possible issues. This indicates a widespread recognition of the ethical and privacy considerations accompanying AI implementation and underscores the importance of addressing these concerns in organizational AI strategies.

A surprisingly large portion of respondents – 46 percent – indicated no concerns, which may suggest either confidence in existing safeguards or a lack of awareness regarding potential ethical and privacy implications. Regardless, the substantial portion of respondents expressing apprehension highlights the need for companies to prioritize ethical AI practices, transparency and robust privacy measures to build trust among employees and stakeholders and mitigate potential risks associated with AI deployment.



Conclusion and recommendations:

The *Artificial Intelligence and the Indiana Workforce* report illuminates AI's transformative impact on businesses, workers and the economy. It underscores the urgency of proactive strategies to harness AI's potential while mitigating its challenges.

As AI adoption accelerates, it will reshape job roles, skill requirements and sector dynamics, necessitating a comprehensive approach from business leaders, policymakers, educators and workers.

National analysts and report participants shared key recommendations for ensuring that Indiana leads through digital transformation with a people-focused, business-growth mindset.

1. **We must act now to prepare humans, institutions and ecosystems for an AI-transformed future of work:** Employers, workforce leaders, training providers and policymakers need to look carefully at how AI will interact with a wide range of tasks and skills to determine which occupations and industries are well-suited to capitalize on uniquely human skills that are already important for those roles;

2. **Jobs integrating durable skills demonstrate AI resilience:** Our analysis shows that many of the most in-demand occupations across all sectors in Indiana can be better positioned than many anticipate. Many of the most essential skills to current IT roles are vulnerable to AI displacement. Still, a significant percentage of skills (often half or more) show lower short-term vulnerability to IT replacement or displacement. The bottom line is that many workers will see their roles changed but not eliminated.

3. **Focus on skills, not just credentials:** Shift hiring practices towards skill-based recruitment and talent development to ensure alignment between workforce capabilities and business needs. Invest in talent development programs tailored to emerging AI-related skills. Design future jobs and training programs to capitalize on these durable skills so that jobs held by humans become and remain higher-quality jobs.

4. **Need for training and upskilling:** There is a recognition of the need for training programs, upskilling initiatives, and partnerships with educational institutions to help employees navigate the changes AI brings. Training might include leveraging AI for technology solutions, productivity tools, and data analytics.

5. **Invest in foundational skills:** Prioritize the development of durable human skills such as communication, critical thinking and creativity, which complement AI capabilities and enhance workforce resilience.

6. **Embrace continuous lifelong learning:** Foster a culture of continuous learning within organizations, promoting upskilling, reskilling, and cross-skilling initiatives to equip workers with the evolving skills demanded by AI.

7. **Foster inclusive growth:** Prioritize diversity and inclusion efforts in AI adoption, ensuring equitable access to opportunities for historically marginalized groups. Collaborate with community organizations and educational institutions to reach untapped talent pools.

8. **Develop ethical AI guidelines and promote responsible AI:** Establish clear ethical frameworks for AI deployment, prioritizing transparency, fairness, and accountability. Incorporate ethical AI considerations into training programs and decision-making processes.

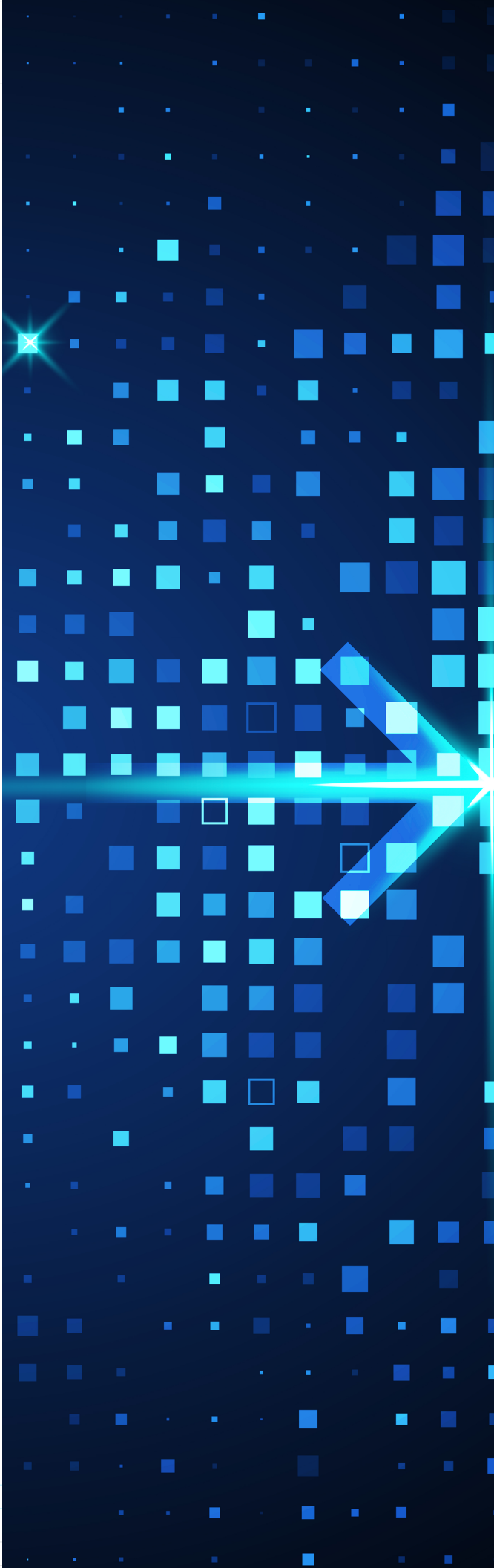
9. **Promote sector-specific strategies:** Tailor AI adoption strategies to different sectors' unique needs and challenges, recognizing varying automation potentials and workforce impacts across industries.

10. **Strengthen public-private partnerships:** Foster collaboration between government, industry, academia and community stakeholders to address workforce challenges and drive inclusive AI-driven economic growth.

11. **Anticipate regulatory landscape:** Stay abreast of evolving regulatory frameworks surrounding AI to ensure compliance and minimize risks associated with overregulation or inadequate oversight.

12. **Foster a future-forward mindset:** AI is an exponential technology. It is essential to encourage a forward-thinking and iterative approach to AI integration, emphasizing long-term vision, adaptability, and innovation readiness in preparing for the AI-transformed future of work.

By heeding these recommendations, business leaders and workers can confidently navigate the AI-driven landscape, harnessing its potential to drive innovation, enhance productivity, and create inclusive economic opportunities for all.



Appendices: The JFF AI & Skills Framework

Skill clusters associated with each type of AI-impact from the AI-ready workforce framework

AI-impact type	Associated skills: O*NET		Associated skills: Lightcast	
Elevate	**Interpersonal task** • Establishing and maintaining interpersonal relationships • Performing for or working directly with the public • Contact with others **Group task** • Work with work group or team • Face-to-face discussions • Coordinating the work and activities of others	**Conflict resolution** • Resolving conflicts and negotiating with others • Deal with unpleasant or angry people • Frequency of conflict situations **Management and supervision** • Management of financial resources • Staffing organizational units • Guiding, directing, and motivating subordinates	**Common skills** • Interpersonal communications • Team management • Team leadership • Handling confrontation • Team motivation	**Specialized skills** • Conflict resolution • Financial management • Staff management
Augment	**Communication** • Speaking • Communicating with people outside the organization • Active listening **Systems analysis** • Systems analysis • Systems evaluation • Organizing, planning, and prioritizing work	**Creative and critical thinking** • Critical thinking • Thinking creatively • Originality	**Common skills** • Communications • Active listening • Systems analysis • Decision making • Critical thinking • Creative thinking • Creativity	
Complement	**Equipment maintenance** • Equipment maintenance • Repairing and maintaining mechanical equipment • Troubleshooting **Equipment operation** • Operating vehicles, mechanized devices, or equipment • In an enclosed vehicle or equipment • Response orientation	**Machine control** • Operation and control • Controlling machines and processes • Control precision **Hazardous task** • Wear common protective or safety equipment such as safety shoes, glasses, gloves, hearing protection, hard hats, or life jackets • Exposed to hazardous equipment • Exposed to contaminants	**Common skills** • Troubleshooting	**Specialized skills** • Equipment maintenance • Machinery repair and maintenance • Equipment operation • Motor vehicle operation • Machine operation • Machine controls • Safety standards • Hazardous material handling

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AI-impact type	Associated skills: O*NET		Associated skills: Lightcast	
Displace	**Routine problem solving** • Importance of being exact or accurate • Importance of repeating same tasks • Information ordering	**Information processing** • Processing information • Analyzing data or information • Getting information	**Common skills** • Problem solving • Information gathering • Information processing	**Specialized skills** • Data analysis • Information ordering
Replace	**General physical task** • Performing general physical activities • Handling and moving objects • Static strength	**Dynamic physical task** • Dynamic strength • Dynamic flexibility • Gross body equilibrium	**Common skills** • Physical strength • Physical flexibility • Dynamic balance	**Specialized skills** • Manual handling

About the authors

Dennis A. Trinkle, Ph.D.

Dennis Trinkle is Senior Vice President, Talent, Strategy, and Partnerships for TechPoint, Indiana's tech ecosystem accelerator. Dr. Trinkle has served leading institutions across the higher education, corporate, and government sectors, including president, chief executive officer, and board chair for many companies and non—profit organizations. He is the author and editor of 18 books and over 75 articles on entrepreneurship, technology, leadership, teaching and learning, and history. He developed the award-winning video game on entrepreneurship with Kevin Allen, CEO of EiGame-***Fireworks: The Entrepreneurship Experience (2018)***. His latest books, Recipes for Success: How to Start a Business and The Future Disruptors: Coming Transformations in Business, Technology, and Leadership, were published in 2021.

Melissa Booth, MS

Melissa Booth is a graduate assistant at Ball State University in Information and Communication Sciences. She formerly worked as a career specialist for Jobs for America and in managerial, communication and merchandising roles for J.Crew and Forever 21.

Hesham Mohamed Allam, Ph.D.

Hesham Allam holds an interdisciplinary Ph.D. from Dalhousie University, integrating computer science, business administration, and information management. Additionally, he received my Master of Business Administration (MBA) in Management Information Systems from California State University, Sacramento.

His research primarily revolves around comprehending the diffusion of information technology (IT) in both organizations and society. He focuses on critical aspects such as technology acceptance, usability, and the broader impact of information and communication technologies (ICT) on human and organizational capital, with over 25 years of extensive experience in teaching and research across various educational institutions and consulting roles. His primary area of expertise lies in harnessing unstructured big data to derive quantifiable insights that address business challenges. Leveraging advanced business intelligence tools, he has consistently worked towards providing strategic solutions and enhancing organizational efficiency.

Ball State graduate student research contributors

Emmanuel Adjei

Daniel Ahengua

Ashley Aiken

Edward Blibo

Tico Brisker

Kate Camacho

Anna Faulkinbury

Jessica Fry

Eli Herran

Lauren Hutto

Mike James

Lauren McClain

Jordan McKey

Kalyn Melham

Claudia Metzger

Ebuka Mmaduekwe

Dakota Niles

Vince Orlando

Cassandra Sackey

Jama Tigher

Kielan Williams

Zach Wilson

Joel Wiredu

About TechPoint

TechPoint, is the Central Indiana Corporate Partnership's branded initiative for Indiana's digital innovation economy and overall tech ecosystem. The industry-led team is focused on working with public, private and industry partners to expand tech talent pipeline, enhance resource connectivity for enterprise organizations and startups alike, and elevate the industry by activating the community and amplifying stories of success. For more information, please visit www.techpoint.org.

About CICS

The Center for Information and Communication Sciences (CICS) at Ball State University is a top-ranked program in the United States, recognized by U.S. News & World Report. As an innovative and interdisciplinary center, CICS brings together students, faculty, and industry partners to advance knowledge and solve real-world challenges at the intersection of information, communication, and technology. Through cutting-edge research, immersive learning projects, and industry collaborations, CICS faculty and students are shaping the future of data analytics, user experience design, emerging media, and communication technologies. With a curriculum emphasizing theory and hands-on experience, CICS graduates are well-prepared to become leaders and changemakers in their chosen careers.

Methodology

The Indiana findings and recommendations in this report are based on research conducted by broad cross-industry feedback and on structured interviews with more than 100 Indiana business leaders and workers, including senior executives, hiring managers and frontline workers in the tech and tech-powered ecosystem. The overall context was provided by an extensive review of current national research by report authors Dennis Trinkle, Ph.D., Senior Vice President at TechPoint, and Hesham Allam, Ph.D., Professor of Information and Communication at Ball State University. The authors were supported by a team of graduate research students from the Ball State University Center for Information and Communication Sciences led by Melissa Brown. Reports and articles cited and used as resources are identified in the sources cited section. A meta-analysis of these reports and national survey findings surfaced several foundational national trends that are mirrored in the Indiana ecosystem.

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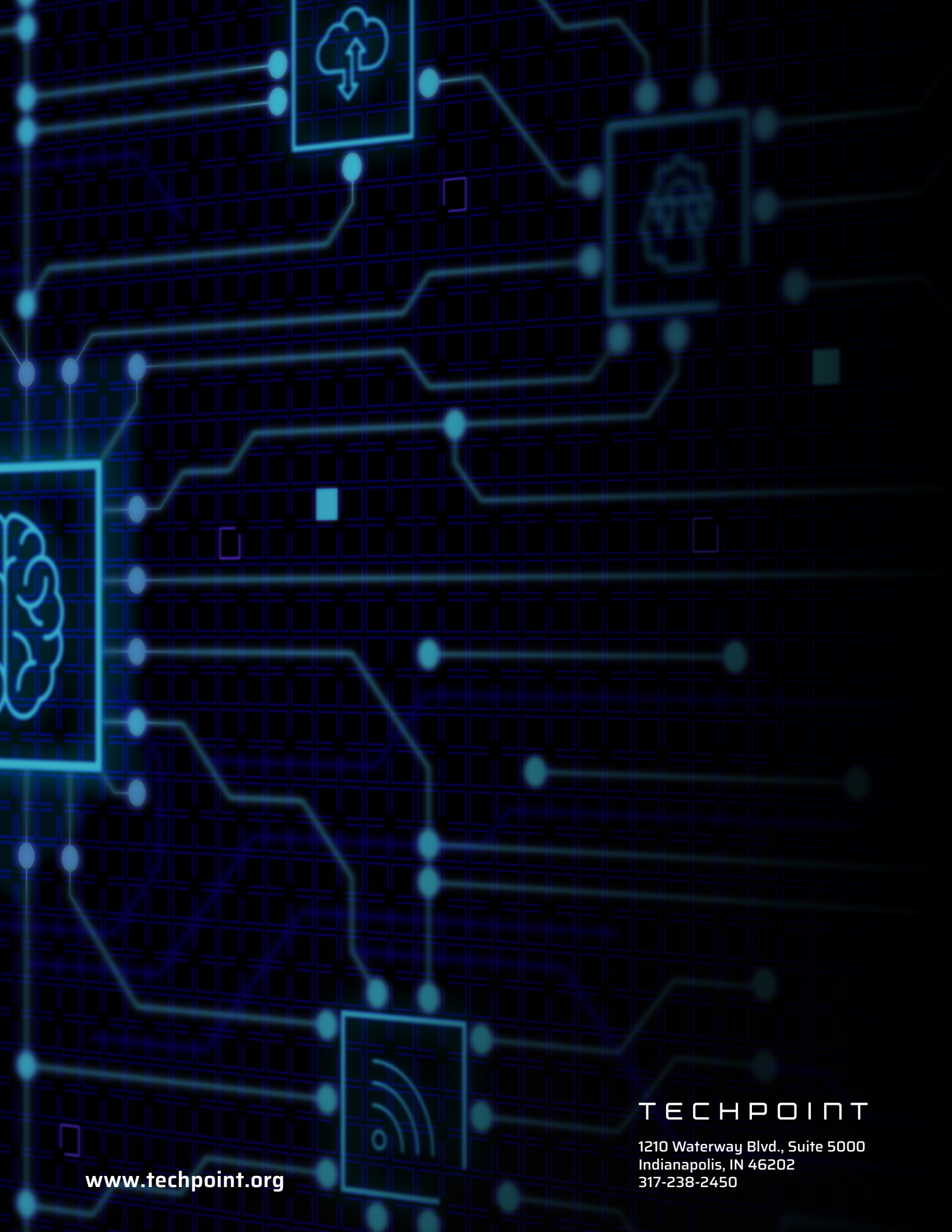

TECHPOINT

1210 Waterway Blvd., Suite 5000
Indianapolis, IN 46202
317-238-2450

www.techpoint.org