AI Integration and Career Readiness: Technology Professionals' Perspectives

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Abstract
As Artificial Intelligence (AI) continues to revolutionize the way we work, many Information Technology (IT) professionals find themselves navigating an unpredictable landscape. This exploratory study examines how Information Technology (IT) professionals view AI in their work and how to prepare for a career in the AI Era. Using a cross-sectional survey, we collected data from technology professionals in the United States, Ghana, and Uganda. The results show that participants are concerned about the reliability of AI's output, privacy, and the need for human oversight. The participants highlighted the importance of critical thinking skills, adaptability, ongoing professional development, ethical awareness, and effective collaboration with AI systems to remain competitive. The findings highlight the importance of AI literacy, human oversight, adaptability, and continuous learning, and recommend that Career and Technical Education (CTE) programs comprehensively prepare students in both technical and soft skills, equipping them to critically evaluate and effectively collaborate with AI technologies.

Keywords
Artificial Intelligence (AI), AI integration, AI literacy, career readiness, human oversight, continuous learning, professional development, Career and Technical Education (CTE).

Introduction

Artificial Intelligence (AI) is no longer a future concept but is now actively integrated into various domains (Babashahi et al., 2024). The rapid growth and proliferation of AI tools in the workplace have accelerated both technological and business transformation in organizations. The current AI revolution is moving at a much faster pace, compressing years of transformation into months, with an estimated 40% of jobs worldwide likely to be affected (Humphries et al., 2026). This has compelled both organizations and educational institutions to reconsider what it means to be career-ready in this technology era.

The integration of AI into the workplace is continuously redefining workflows, decision-making processes, and the roles and responsibilities of professionals. As a result, professionals are adapting and learning AI tools to improve their productivity. However, organizations still face challenges in delivering internal training on AI tools to employees, as some staff receive in-depth training while others receive only a brief introduction (Muehlemann, 2025). This has significantly impacted AI adoption among several individuals due to a skills gap stemming from inadequate training.

Therefore, understanding how technology professionals perceive AI integration is becoming important for informing workforce-preparation and career-readiness initiatives. This study explores the general perceptions of Information Technology (IT) professionals regarding AI integration in the workplace, with an emphasis on adaptability and career-readiness to remain competitive. The following research question (RQ) guided the study: How do IT professionals perceive AI integration, and what are their views on remaining competitive in an AI-driven workforce? The findings are intended to share insights that may inform workforce preparation and Career and Technical Education (CTE) programs as they prepare learners for AI-driven workplaces.

Methodology

This exploratory cross-sectional study used a survey to examine technology professionals' perceptions of AI integration in the workplace and their preparation for potential future careers in AI. The study was approved by the institutional review board (IRB). The data were collected via an anonymous survey comprising 26 items: 18 closed-ended and 8 open-ended questions. The survey focused on demographic information, their perceptions and attitudes about AI integration, AI adaptability and training, and the implications for career prospects. Most survey items used either a five-point Likert scale from 1 ("Strongly Disagree") to 5 ("Strongly Agree") or a frequency scale from 1 ("Never") to 5 ("Always"). Other survey items helped to obtain qualitative data, allowing respondents to share their experiences beyond the closed-ended questions.

The target population consisted of information technology (IT) professionals who were at least 18 years old. Participants were recruited through professional networking platforms such as LinkedIn and through email. The survey link also included informed consent, and participants were free to decline to participate or withdraw at any time while completing the survey. The current preliminary findings are based on a sample of 36 technology professionals. Due to limited preliminary data, the primary mode of analysis was descriptive, supplemented by Chi-Square Tests for Independence.

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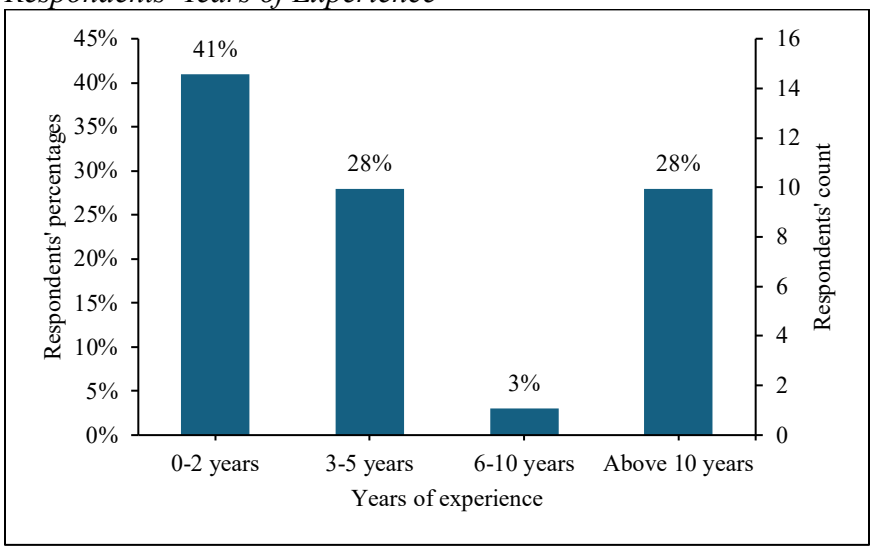
Results

Overview

The current study provides preliminary findings based on the current sample size. The objective of this study was to explore the general perceptions of Information Technology (IT) professionals of AI integration in the workplace, with an emphasis on adaptability and career readiness to remain competitive. A total of 36 participants responded to the survey. Based on self-reported data, they were IT professionals from the United States (52.8%, *n* = 19), Ghana (19.4%, *n* = 7), and Uganda (27.8%, *n* = 10). Among the respondents, 56% were male (*n* = 20) and 44% were female (*n* = 16). Figure 1 illustrates the distribution of years of experience alongside the corresponding number of individuals in each category. Figure 2 shows the number of individuals using various Generative AI (GenAI) tools. Some questions were unanswered by respondents.

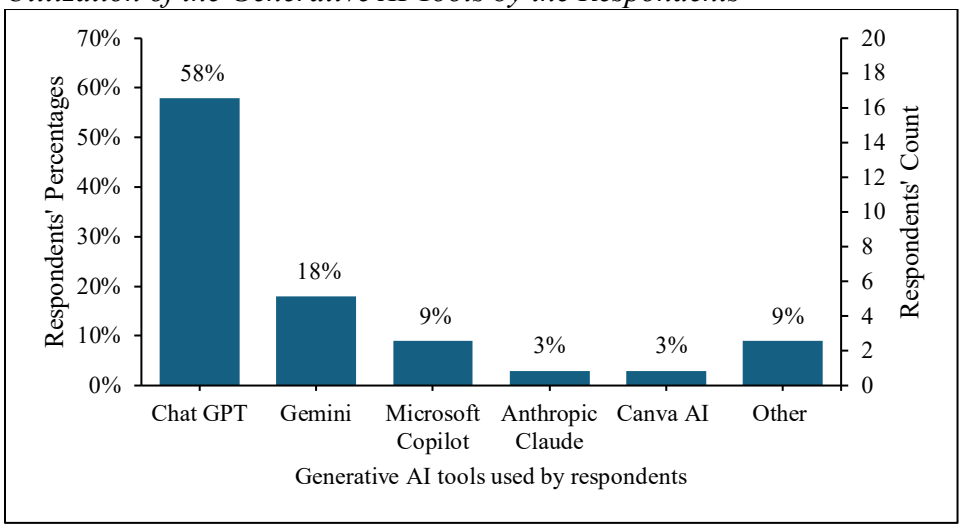
Figure 1

Respondents' Years of Experience



Note: N = 36 respondents' years of experience were distributed as follows: 0–2 years (*n* = 15, 41.7%); 3–5 years (*n* = 10, 27.8%); 6–10 years (*n* = 1, 2.8%); and above 10 years (*n* = 10, 27.8%).

Figure 2
Utilization of the Generative AI Tools by the Respondents



Note: Among the $n = 33$ valid responses, ChatGPT was selected by 19 respondents (57.6%), Gemini by 6 (18.2%), Microsoft Copilot by 3 (9.1%), Anthropic Claude by 1 (3%), Canva AI by 1 (3%), and other AI tools by 3 (9.1%).

IT Professionals' Perception of AI Integration:
To understand IT professionals' perceptions of AI integration, the survey asked questions about their general perceptions of AI integration, productivity levels, AI reliability, and AI limitations. Table 1 through 3 provides the results:

Some survey items asked about IT professionals' overall perceptions of AI integration. These items were measured on a 5-point Likert Scale ranging from Strongly Disagree (1) to Strongly Agree (5). Table 1 provides the results of these survey items. Based on the responses, participants were slightly below the neutral midpoint in rating AI integration as an important aspect of their professional activities ($M = 2.44$, $SD = 1.16$). Likewise, respondents expressed a cautious attitude toward AI in their professional roles ($M = 2.44$, $SD = 0.98$). Additionally, it appears that AI had not yet had a strong influence on their professional roles in meaningful ways ($M = 2.44$, $SD = 0.95$). Lastly, the respondents were cautious regarding the long-term positive influence of AI on their current roles ($M = 2.44$, $SD = 0.98$). Overall, since the mean across all survey items was below Neutral (3), it appears that participants were cautious about AI integration in their current roles.

Table 1
IT Professionals' perceptions of AI integration

Survey Item	N	Mean	SD
AI integration is an important aspect of my professional activities.	32	2.44	1.16
I have a positive attitude towards AI in my professional role.	32	2.44	.98
AI has influenced my professional role in meaningful ways.	32	2.44	.95
I believe AI will positively influence my current role in the long term.	32	2.44	.98

Some survey items examined IT professionals' perceptions of the reliability of AI-assisted tools. These items were measured on a 5-point Likert Scale ranging from Strongly Disagree (1) to Strongly Agree (5). Table 2 provides the results of these survey items. Per Table 2, when asked, "*To what extent do you agree with these perceptions on the reliability of AI support in technical tasks?*" Participants' responses ranged from total disagreement to near neutrality regarding the reliability of AI tools ($M = 2.81$, $SD = 1.06$). The participants also agreed that they cross-check information provided by AI ($M = 4.09$, $SD = 1.254$).

Table 2
IT Professionals' perceptions on the reliability of AI support in technical tasks

Survey Item	N	Mean	SD
I regularly use AI-assisted tools in my daily professional tasks	32	3.44	1.22
Using AI-assisted tools has improved my productivity at work	31	3.84	.97
The information given by the AI-assisted tools is reliable	32	2.81	1.06
I have to cross-check the information given by AI before applying it to my technical tasks	32	4.09	1.25

Some of the survey items examined factors influencing IT professionals' decisions to utilize AI-assisted tools at work. These items were measured using a five-point frequency scale ranging from Never (1), Rarely (2), Sometimes (3), Often (4), Always (5). Table 3 presents the responses to these survey items. As shown in Table 3, respondents reported that inaccurate or unreliable information ($M = 3.31$, $SD = 0.86$) and privacy or data concerns ($M = 3.44$, $SD = 1.16$) sometimes influenced their decisions to use AI-assisted tools at work. By contrast, participants indicated that inadequate training and guidance on using AI tools was the least frequently reported limitation influencing AI use in professional settings ($M = 2.41$, $SD = 1.13$).

Table 3
Limitations of using AI tools for professional work

Survey Item	N	Mean	SD
Inaccurate or unreliable information	32	3.31	.86
Privacy or data concerns	32	3.44	1.16
Inadequate training and guidance on how to use AI tools	32	2.41	1.13
Integration issues with existing systems	32	3.00	1.19

Career Readiness

One of the survey items asked the participants about different skills needed to be competitive in the era of AI. For these skills, participants selected their responses on a Likert scale from Strongly Disagree (1) to Strongly Agree (5). Table 4 describes the participants' responses. Participants strongly agree that adaptability and continuous learning ($M = 4.50$, $SD = 0.78$) are important skills. They also agree that Ethical and Privacy Awareness ($M = 4.45$, $SD = 0.85$) is an important skill.

Table 4

Abilities that are important to stay competitive in this era of AI

Survey Item	N	Mean	SD
Critical thinking and problem solving	32	4.38	.94
Data literacy	31	4.29	.82
Adaptability and continuous learning	30	4.50	.78
Ethical and privacy awareness	31	4.45	.85
Collaboration with AI systems	31	3.90	.83

Based on the Chi-Square Test for Independence, there was no significant relationship between sex and all the career readiness factors, with a p-value greater than .05 (Table 5). This indicates that participants generally had similar views regarding the career readiness factors irrespective of sex. Additionally, a Chi-Square test for independence revealed no significant relationship between the years of IT experience and most of the career readiness factors, with a p-value greater than .05 (Table 6). There was a significant relationship between the years of professional IT experience and collaboration with AI systems; however, these findings require additional investigation due to the small sample size.

Table 5

Chi-Square Test for Independence (Sex and Career Readiness factors)

Survey Item	Chi-Square Value	df	p-value
Critical thinking and problem solving	.489	3	.919
Data literacy	6.221	3	.101
Adaptability and continuous learning	2.368	3	.500
Ethical and privacy awareness	1.355	3	.716
Collaboration with AI systems	4.807	3	.186

Table 6
Chi-Square Test for Independence (Years of Technology Experience and Career Readiness factors)

Survey Item	Chi-Square Value	df	p-value
Critical thinking and problem solving	7.366	9	.599
Data literacy	3.735	9	.928
Adaptability and continuous learning	5.411	9	.797
Ethical and privacy awareness	7.205	9	.616
Collaboration with AI systems	19.795	9	.019

Discussion

AI Tool Utilization

The preliminary findings indicate that 58% of respondents used ChatGPT, consistent with Olavsrud's (2025) findings, in which 62% reported using ChatGPT. There could be several reasons for ChatGPT's popularity among IT professionals, such as a) it being one of the earliest widely accessible Generative AI tools available to the public, and b) its versatility across different professional tasks. One of the things that the current findings point to is that professionals are increasingly integrating AI into professional workflows and processes. Therefore, organizations should have professional development programs for employees; policies and processes for the ethical use of AI; and enforce strict human oversight.

IT Professionals perception on integration

The preliminary findings suggest that respondents were cautious about integrating AI into their current roles. They were also cautious about the long-term influence of AI on their career. There may be growing uncertainty among professionals about how automation is impacting their roles or potentially eliminating their jobs. The current findings are also consistent with those of Savolainen et al. (2026), who found that automation tools are also a source of anxiety about job security for workers. So, while people may recognize the positive impact of AI on output quality, productivity, and efficiency, there may be valid concerns about job stability and security.

Secondly, the findings show that participants are neutral or cautious about the reliability of AI tools and cross-check AI output before using it. According to McClain et al. (2025), 70% of professionals are concerned about inaccurate information from AI tools. Trust is an essential concern with the adoption of AI systems. An increasing body of research stresses that without trust, professionals are unlikely to fully integrate AI into critical workflows. Bach et al. (2022) conducted a systematic review of trust in AI-enabled systems, concluding that transparency, explainability, and perceived control are determining factors in whether users will rely on AI outputs. These findings suggest that IT professionals view these tools as supportive rather than autonomous tools. Hence, there is a need for human oversight and human judgment when working with AI tools. Without human oversight and judgment, people may accept AI output uncritically, leading to automation bias (Holzinger et al., 2024).

Implications For Career Readiness

The preliminary findings, which emphasized human oversight, critical evaluation of AI output, and ethical awareness, highlight the need for AI literacy and adaptability in professional settings. According to Long and Magerko (2020), AI literacy includes the ability to "critically evaluate AI technologies; communicate and collaborate effectively with AI." Table 4 lists some of the skills that IT professionals consider critical for competitiveness in the Era of AI. These skills include: Critical Thinking and Problem-Solving, Data Literacy, Adaptability and Continuous Learning, Ethical and Privacy Awareness, and Collaboration with AI Systems. Because these competencies were identified by practicing IT professionals, the findings provide preliminary evidence regarding the knowledge and skills that Career and Technical Education (CTE) programs should emphasize when preparing students for AI-enabled workplaces. Hence, Career and Technical Education (CTE) programs should not only focus on technical skills but must also heavily emphasize AI Literacy, Critical Thinking, Adaptability, Ethical Awareness, Human Oversight, and Collaboration with AI Tools.

Conclusion

The findings suggest that IT professionals recognize both the opportunities and challenges associated with AI integration in professional environments. Participants expressed cautious perceptions regarding reliability, privacy, and the long-term impact of AI on professional roles. Additionally, based on the preliminary data, the professionals continue to value human oversight, critical thinking, and professional judgment when utilizing AI-supported technologies.

The findings highlight the significance of AI literacy, adaptability, continuous learning, and ethical awareness in preparing for AI-driven workplaces. Therefore, Career and Technical Education (CTE) programs and workforce preparation initiatives may need to place greater emphasis on helping learners and professionals understand how to responsibly use, evaluate, and collaborate with AI-assisted technologies.

This study also has certain limitations. The most important limitation of this study is the small sample size due to time constraints. Additional data are needed to confirm the present findings. Therefore, future research may benefit from larger sample sizes and additional investigation into how AI integration is impacting various technology professions.

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