

DOI: [https://doi.org/10.48009/4\\_iis\\_2025\\_115](https://doi.org/10.48009/4_iis_2025_115)

## An empirical investigation of AI adoption and perception among IT professionals

**Grace Chen**, *Sharon High School, [gchen2026@sharonschools.net](mailto:gchen2026@sharonschools.net)*  
**Suhong Li**, *Bryant University, [sli@bryant.edu](mailto:sli@bryant.edu)*

### Abstract

This study investigates the adoption/perception of AI tools among IT professionals based on a survey collected by Stack Overflow in May 2024 of 45,162 respondents. The results show that the majority of IT professionals are currently using AI tools in their development workflow and that the most common use of AI is in writing code, searching for answers, debugging, and getting help. The top benefits of using AI tools are increasing productivity, speeding up learning, and improving efficiency. The most cited challenges are lack of trust in the output generated by AI tools and lack of contextual understanding in AI tools. The top 3 ethical concerns are the circulation of misinformation, missing or incorrect attribution for sources of data, and biased results that do not represent diverse viewpoints. The results also show that the adoption of AI tools differs by demographic information. Ukraine and India have a higher AI adoption rate than the USA, Germany, and the UK combined. Fintech, software development, and healthcare are the industries that are experiencing the highest rate of adoption of AI tools. The results reveal that people in younger age groups, with less coding experience and working for small organizations tend to adopt AI tools at higher rates than other groups

**Key Words:** AI adoption, AI perception, IT professionals, survey

### Introduction

Artificial intelligence (AI), particularly in its generative form, has rapidly transitioned from frontier technology to a widely integrated tool in modern workspaces. Fueled by advances in large language models (LLMs), machine learning, and automation, generative AI systems such as ChatGPT, GitHub Copilot, and Gemini have become central to software development, content creation, and decision support. As a result, AI is reshaping the way individuals write code, retrieve information, and collaborate across digital platforms. While early applications of AI emphasized predictive analytics and recommendation systems, recent developments have shifted focus toward real-time generation and cognitive augmentation.

The increasing ubiquity of AI tools raises important questions about user trust, perceived value, and the ethical implications of automated decision-making. For IT professionals, many of whom are among the earliest adopters and implementers of these technologies, understanding their attitudes and behaviors toward AI adoption provides valuable insights into how these tools are reshaping technical workflows and workplace dynamics. Despite the volume of commentary surrounding generative AI, empirical studies grounded in large-scale user data remain limited, especially with respect to how developers perceive AI's benefits, limitations, and potential risks.

This study contributes to that gap by analyzing data collected by Stack Overflow in May 2024 of 45,162 IT professionals. Drawing on one of the most comprehensive developer surveys globally, this research offers insights into the adoption and perception of AI tools within the software development community. This data examines not only how AI tools are used and how professionals assess their benefits, risks, and limitations, but also how usage patterns vary across countries, industries, company sizes, and respondent demographics including education, age, job function, years of coding experience, and salary.

The remainder of the paper is structured as follows. The next section presents a review of relevant literature, followed by a statement of the research objective. The subsequent sections describe the research methodology and present the results of the data analysis. The paper concludes with a discussion of the key findings and their implications for future research and practice.

## Literature Review

The adoption of artificial intelligence (AI) and the evolving perceptions of its impact have become central topics across multiple disciplines. Scholarly research over the past decade reveals nuanced insights into AI's integration that range from technical implementation to emotional and ethical responses. The majority of previous literature has predominantly employed systematic literature reviews as their primary research methodology. This approach was used in studies exploring AI applications in marketing (Mehta et al., 2022), retail (Heins, 2023), finance (Hentzen et al., 2022), e-commerce (Budhwar et al., 2022), and human resources (Jatobá et al., 2023), which reflects an effort to consolidate fragmented knowledge and identify thematic trends across domains.

A few articles adopted survey-based methods or meta-analytic techniques, particularly in examining user attitudes and performance expectations toward AI tools (Sargın, 2024; Mehta et al., 2022). Others applied qualitative content analysis or discourse analysis, especially in studies investigating AI perceptions in education (Bearman et al., 2023), social media (Wang, 2023), and the future of work (Ocal & Crowston, 2024). Some articles also integrated mixed methods or presented conceptual frameworks grounded in empirical observations (Zamani et al., 2023; Nishant et al., 2020), illustrating diverse methodological orientations across the AI research landscape. Table 1 summarizes the major findings of the impact of AI across domains according to previous literature, providing critical context for understanding IT professionals' attitudes toward AI tools.

As previously noted, prior studies have primarily relied on systematic literature reviews, with limited research utilizing large-scale user data. Additionally, while general sentiment of several other domains is identified, there is an absence of analysis of IT professionals. This study addresses that gap by analyzing the adoption and perception of AI tools among over 45,000 IT professionals. Specifically, it seeks to identify patterns in the use of AI tools within development workflows, evaluate perceived benefits and challenges, assess attitudes toward AI's impact on employment and ethical concerns, and explore variations in adoption across organizational characteristics as well as key demographics.

## Methodology

This dataset was obtained from the Stack Overflow annual developer survey and can be downloaded from the link <https://survey.stackoverflow.co/>. Every year, Stack Overflow sends a survey to all the developers who visit their website. Over 65,000 developers in May 2024 responded to their annual survey about their feelings concerning coding, working, and AI. This study focused on the developers who have a full-time job at the time of survey and their use of AI tools in the workplace. The total number of respondents, after

being filtered for relevant questions, has been reduced to 45,162, and the following questions will be investigated:

1. Adoption of AI Tools: Do you currently use AI tools in your development process?
2. Stages of Workflow Using AI Tools: Which parts of your development workflow are you currently using AI tools for? Please select all that apply.
3. Sentiment on Using AI Tools: How favorable is your stance on using AI tools as part of your development workflow?
4. Benefits of Using AI Tools: For the AI tools you use as part of your development workflow, what are the MOST important benefits you are hoping to achieve? Please check all that apply.
5. Challenges in Using AI Tools: What are the challenges to your company/whole team using AI code assistants or GenAI tools? Select all that apply.
6. AI Tools in Handling Complex Tasks: How well do the AI tools you use in your development workflow handle complex tasks?
7. Trust in Accuracy of AI Output: How much do you trust the accuracy of the output from AI tools as part of your development workflow?
8. AI Ethical Concerns: Which AI ethical responsibilities are most important to you? Select all that apply.
9. AI Threat to Job: Do you believe AI is a threat to your current job?

**Table 1. AI Impacts Across Domains**

AI Impact on Domain	Literature
<b>Marketing and Retail</b>	AI has enhanced the experience of the customer and the business in five areas: content marketing, experiential marketing, marketing operations, market research, and integrated digital marketing (Chintalapati and Pandey, 2022). Performance expectancy and effort expectancy strongly influence consumer adoption, which is reinforced by a successful AI model (Mehta et al., 2022). In retail, Heins (2023) finds that AI supports value chain optimization and enhances customer experiences.
<b>Financial Services and E-Commerce</b>	In finance and e-commerce, trust in AI plays a large role in its implementation. Hentzen et al. (2022) observe that although AI adoption is currently driven by perceived service quality and performance accuracy, ethical concerns about data use and decision-making fairness continue to drive down its perceived worth.
<b>Human Resources and Organizational Management</b>	AI's implications for HR extend from operational efficiencies to fundamental shifts in job roles. AI is utilized best as a partner to human workers to support creative decisions and organize large-scale data (Jatobá et al., 2023). AI generally improves efficiency and leads to long-term competitive advantage and process improvement (Enholm, 2021). However, the outcome of AI in various organizations will remain varied as they underestimate the value of AI (Enholm, 2021) and cultural contexts and legal concerns remain a problem for many businesses (Budhwar et al., 2022).
<b>Education and Higher Learning</b>	In higher education, AI is framed either as an imperative transformation or as a disruptor of traditional authority structures (Bearman et al., 2023). The discourse around AI emphasizes its influence on pedagogical relationships and assessment practices. The absence of precise definitions and ethical guidelines limits actionable policy, despite growing use of AI tools in administration and instruction.
<b>Ethical and Social Considerations</b>	Ethical frameworks are increasingly essential to guide AI adoption. Ashok et al. (2022) and Giarmoleo et al. (2024) identify four core concerns across digital technologies: accountability, fairness, transparency, and autonomy. Their reviews warn that bias, opacity, and lack of inclusivity in AI design can erode public trust.
<b>Public Perception and Sentiment</b>	Research on social media sentiment (Ocal & Crowston, 2024) illustrates that curiosity, optimism, and skepticism co-exist in public discourse about AI.

## Results of Data Analysis

This section first presents the findings on AI tool adoption and perception among IT professionals, followed by an analysis of how adoption patterns vary across organizational and demographic characteristics of the respondents.

### Adoption of AI Tools

Figure 1 reveals a strong trend toward adoption of AI technologies among employees engaged in software development. A clear majority of 62% reported that they are currently using AI tools in their development workflows. This high adoption rate suggests growing confidence in the utility of AI-powered tools for enhancing productivity, code generation, debugging, and other aspects of the software lifecycle (Hentzen et al., 2022). There is a significant portion of people that remain unconvinced of the utility of AI tools, as indicated by the 24% of respondents that stated that they are not using AI tools and have no plans to. Factors such as organizational policy, lack of perceived benefit, or concerns over integration and training are hurdles to implementation (Bawack et al., 2022). Interestingly, 14% of employees indicated that they do not yet use AI tools but plan to soon, which signals continued growth in adoption as more teams explore how to leverage generative AI and automation in development environments.

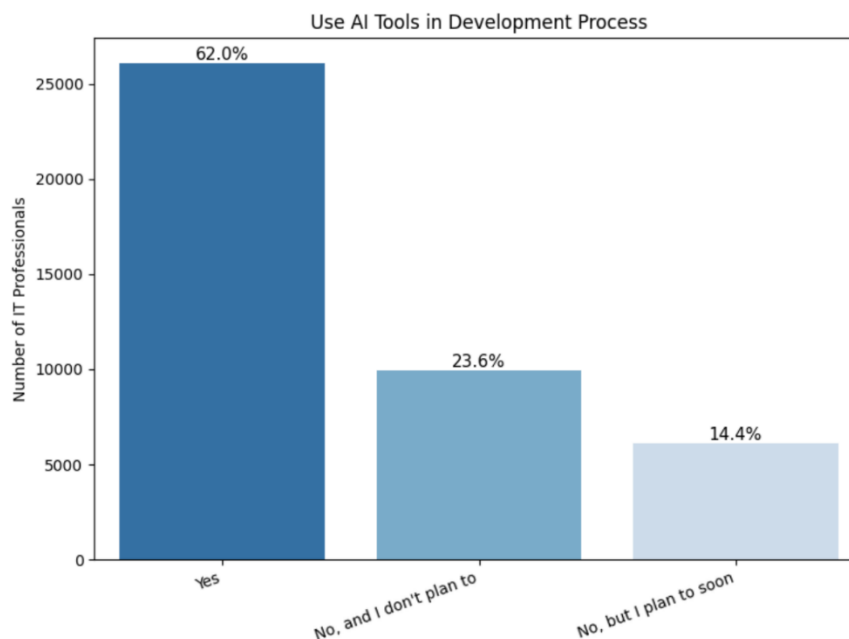
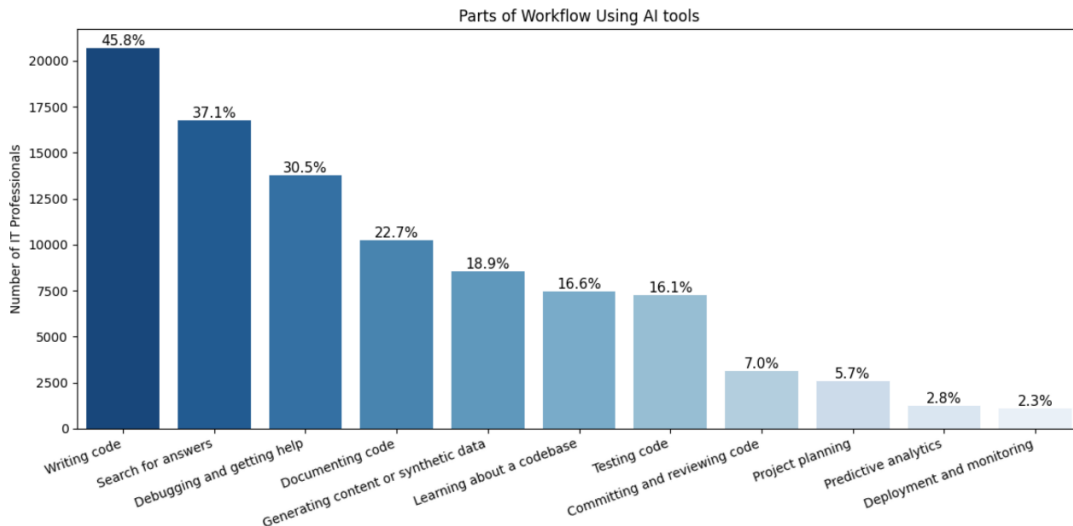


Figure 1. Use AI Tools in Development Process

### Stages of Workflow Using AI Tools

Figure 2 provides a detailed view of how AI is currently integrated into various stages of software development by IT professionals. The most common use of AI is in writing code, as reported by 46% of respondents, followed closely by searching for answers (38%) and debugging and getting help (31%). These findings suggest that AI is being leveraged primarily for coding efficiency, technical support, and problem-solving—areas where generative AI and large language models have demonstrated strong utility. Other notable areas of integration include documenting code (23%) and generating content or synthetic data (20%), reflecting AI's growing role in tasks that enhance productivity and testing capabilities. Less frequent

but still significant uses involve learning about a codebase (17%), testing code (16%), and committing and reviewing code (7%), indicating early adoption in collaborative and quality assurance activities.

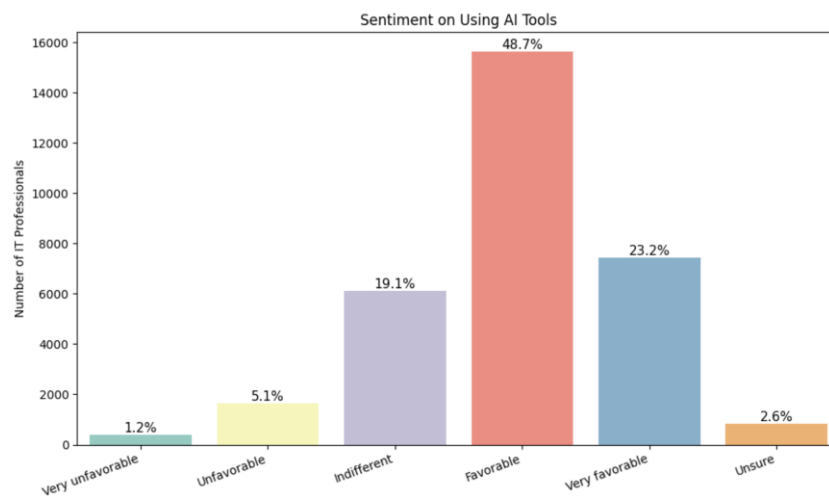


**Figure 2. Workflow using AI Tools**

However, the use of AI tools remains limited in higher-level strategic or operational functions: project planning (6%), predictive analytics (3%), and deployment and monitoring (2%). These results suggest that while AI adoption is strong in direct programming tasks, it is less prevalent in areas that require contextual awareness, long-term planning, or operational reliability. This highlights both the strengths of current AI capabilities and the opportunities for further integration into the broader software development lifecycle.

## Sentiment on Using AI Tools

Figure 3 captures the overall attitudes of IT professionals toward the use of AI in their work. A strong majority of 49% expressed a favorable sentiment and an additional 23% reported a very favorable view, which indicates widespread approval and acceptance of AI tools in professional settings and reinforces the perception that AI is positively transforming workflows.



**Figure 3. Sentiment on Using AI Tools**

In contrast, only a small minority expressed negative sentiments: 5% were unfavorable and just 1% were very unfavorable, suggesting that outright resistance to AI adoption is minimal among IT professionals, in surprising contrast to other fields (Hentzen et al., 2022). Meanwhile, 20% of respondents indicated indifference, which may reflect limited exposure to AI tools or uncertainty about their practical benefits. A small group (2%) remained unsure, possibly signaling the need for further education or experience with AI technologies.

## Benefits of Using IT Tools

Figure 4 illustrates the perceived advantages of using AI tools among IT professionals. The most widely recognized benefit is the increase in productivity, cited by 47% of respondents. This aligns with broader trends showing that AI tools significantly reduce time spent on routine or repetitive tasks. 35% of professionals highlighted speeding up learning as an advantage, suggesting that AI not only supports immediate task completion but also serves as an effective educational aid.

Greater efficiency (33%) and improved accuracy in coding (16%) were also commonly reported, indicating that AI contributes both to the quality and speed of software development. Additionally, 14% of respondents noted that AI helps make workloads more manageable, while a smaller group (4%) observed that AI tools can improve collaboration, possibly through shared access to insights, code suggestions, or documentation support.

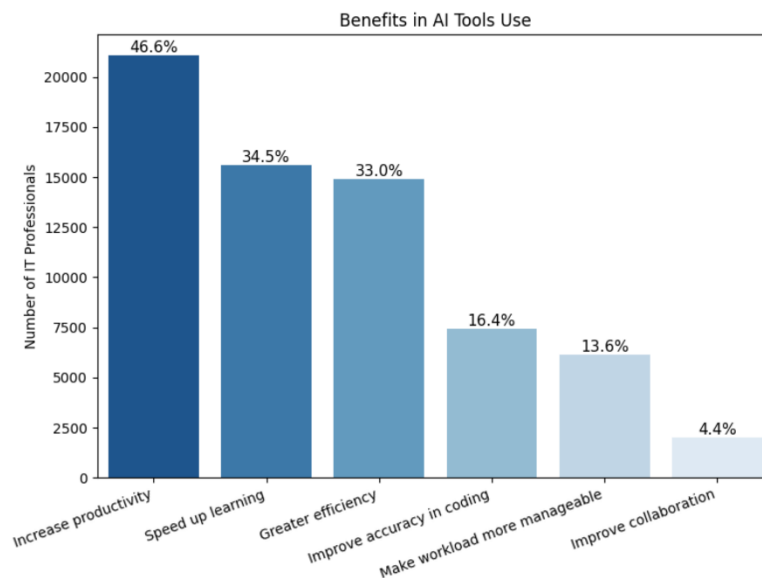
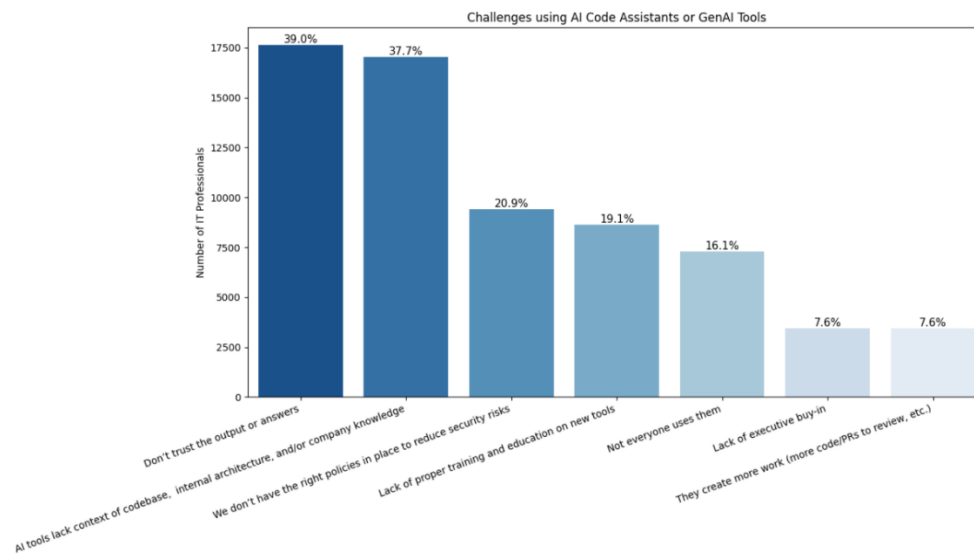


Figure 4. Benefits in AI Tools Use

## Challenges in Using AI Tools

Figure 5 sheds light on the key challenges IT professionals face when working with generative AI tools in software development environments. The most cited challenge, reported by 39% of respondents, is a lack of trust in the output or answers generated by these tools, suggesting concerns about reliability and correctness. Closely following, 38% noted that AI tools lack contextual understanding, which limits their usefulness in real-world applications. Additionally, 21% of respondents indicated the absence of adequate security policies, while 19% pointed to insufficient training and education on the tools. These figures reveal that both organizational infrastructure and user preparedness are critical to effective adoption, as they were in other industries (Name et al., 2023). Other obstacles include the fact that not all team members use these

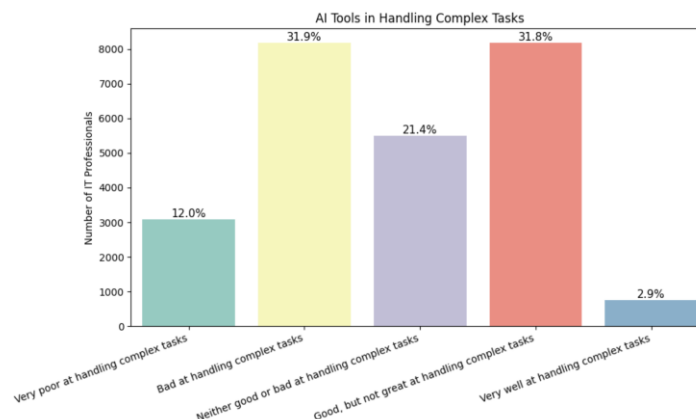
tools (16%), there is a lack of executive buy-in (8%), and there exists a perception that the tools create more work, such as increased code or pull requests needing review (8%).



**Figure 5. Challenges Using AI Code Assistants or GenAI Tools**

## AI Tools in Handling Complex Tasks

Figure 6 provides insight into employees' perceptions of how effectively AI systems manage complex responsibilities. A nearly even split is observed between those who view AI tools unfavorably and favorably: 32% of respondents believe AI tools are "bad at handling complex tasks," while 32% consider them "good, but not great." This suggests a clear divergence in opinion, with a substantial portion of the workforce perceiving limitations in AI's capabilities while an almost equal share acknowledges some level of competence. Meanwhile, 21% remain neutral, indicating uncertainty or lack of direct experience with AI tools in complex scenarios. Only a small fraction of employees expressed extreme views, with 12% stating AI performs "very poorly" and just 3% believing it performs "very well" in complex tasks. Concerns about regulatory compliance and bias still exist with consumers (Bawack et al., 2022). These results imply that while some confidence in AI exists, it is tempered by skepticism, and widespread endorsement of AI for high-level decision-making or sophisticated tasks has yet to be achieved.



**Figure 6. AI Tools in Handling Complex Tasks**

## Trust in Accuracy of AI Output

Figure 7 shows that 40% of the respondents "somewhat trust" AI output, suggesting a cautious but generally positive attitude toward technology. This moderate level of trust may reflect a growing familiarity with AI tools that is restricted by an awareness of their limitations. Interestingly, these findings directly contrast with studies suggesting that greater familiarity of AI tools leads to greater mistrust (Wang, 2023), which may indicate increased helpfulness of AI knowledge regarding technology. Meanwhile, 28% of employees expressed a neutral stance—neither trusting nor distrusting AI—while 23% reported "somewhat distrust." These figures highlight a substantial segment of the workforce that remains uncertain or skeptical about AI accuracy, potentially due to limited understanding or past experiences with flawed outputs. In addition, extreme positions are relatively uncommon: only 8% of respondents reported "highly distrust" and an even smaller 2% expressed "highly trust." This distribution indicates that most employees do not hold polarized views but instead fall somewhere along a spectrum of cautious engagement, which coincides with prior research (Sargin 2024).

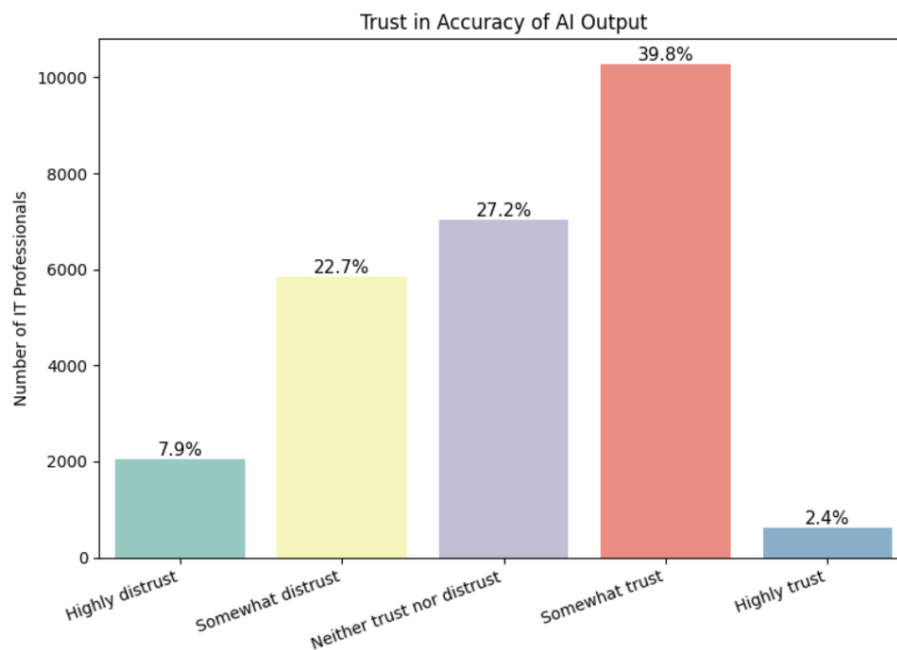
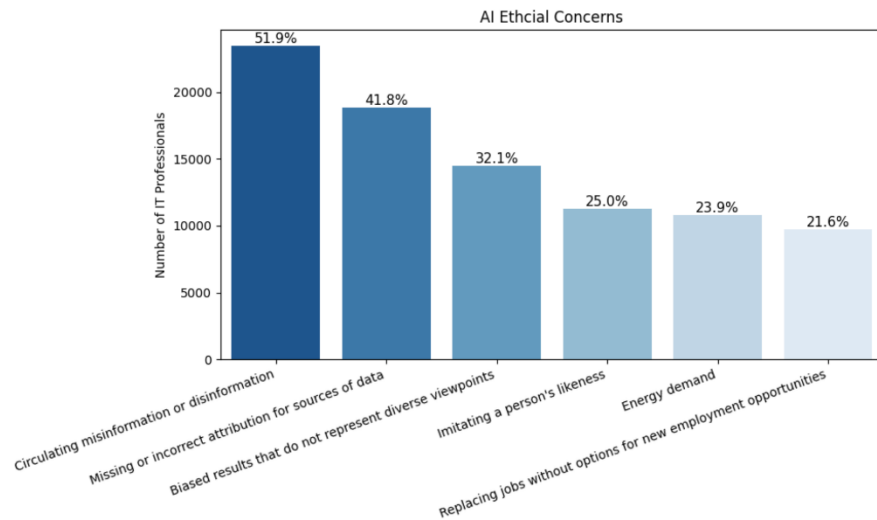


Figure 7. Trust in Accuracy of AI Output

## AI Ethical Concerns

Figure 8 highlights the range of ethical issues identified by IT professionals in relation to artificial intelligence. The most cited concern, reported by 52% of respondents and revealing widespread anxiety about AI's potential to amplify false or misleading content, is the circulation of misinformation or disinformation. This is followed by missing or incorrect attribution for sources of data (42%), which reflects concerns about transparency and intellectual property. Additionally, in line with previous data on the ongoing challenge of algorithmic fairness and inclusivity (Ashtok et al., 2022), 32% of respondents expressed unease about biased results that fail to represent diverse viewpoints. Other prominent concerns include AI imitating a person's likeness (25%), which raises questions about identity, consent, deepfake technologies, and AI's energy demands (24%), highlighting the environmental implications of large-scale model training and deployment. Finally, 21% of respondents are worried about AI replacing jobs without creating new employment opportunities, which reflects apprehension about workforce displacement.

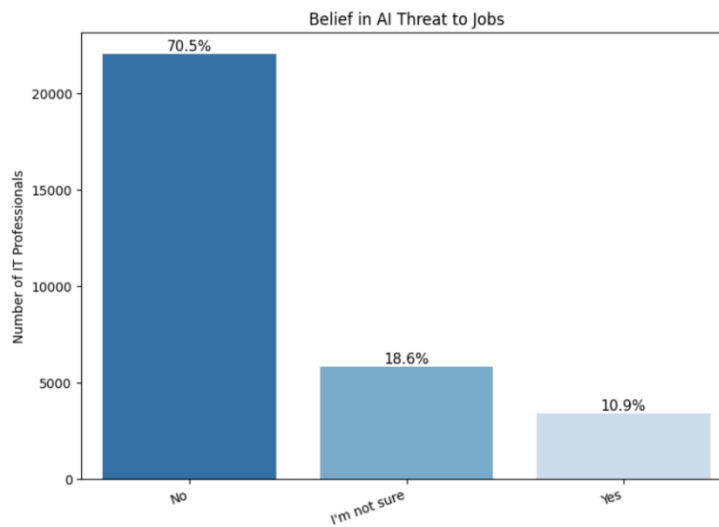




**Figure 8. AI Ethical Concerns**

## AI Threat to Job

Figure 9 shows how IT professionals perceive the impact of AI on job security. A substantial majority of 71% do not view AI as a threat to their employment, which indicates strong confidence in either the complementary nature of AI tools or the resilience of their roles in the face of technological advancement. Meanwhile, the uncertainty of 19% of respondents reflects a degree of ambiguity and potential concern regarding AI's evolving capabilities and the pace of its integration into workplaces. Only 10% believe AI poses a real threat to their jobs, which suggests that fears of widespread job displacement due to AI are not prevalent among IT professionals. These findings highlight a general sense of optimism or stability within the IT sector, possibly stemming from familiarity with AI technologies and their implementation. However, the presence of uncertainty uncovers the need for ongoing dialogue and workforce development to address shifting skill demands as AI continues to evolve.



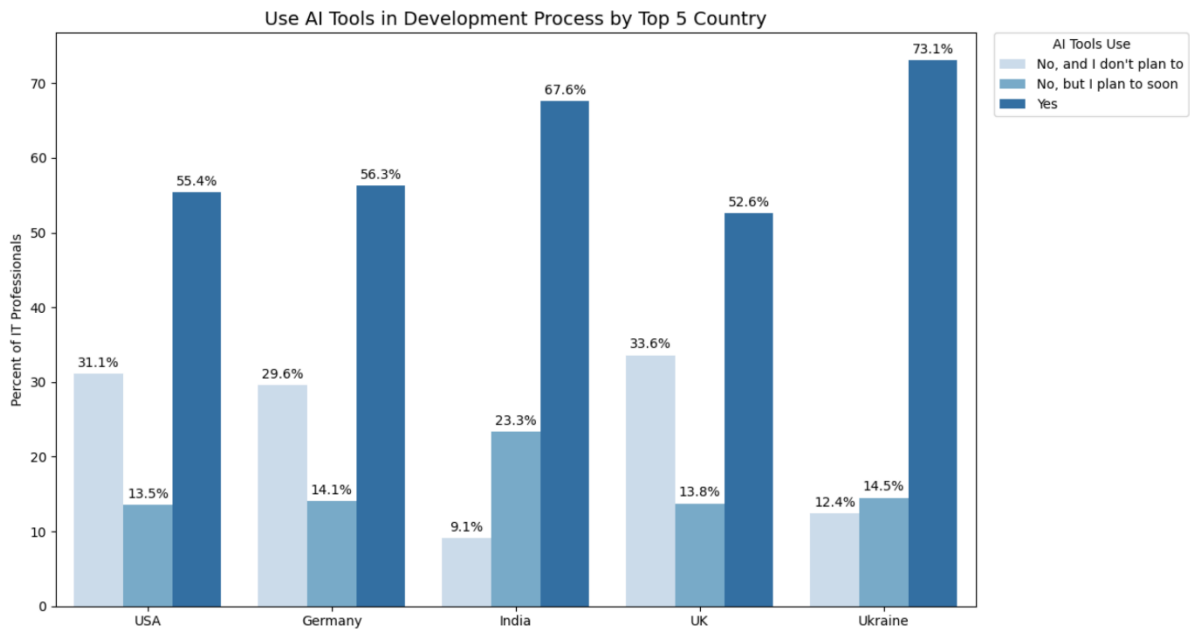
**Figure 9. Belief in AI Threat to Jobs**

## Further Analysis of Adoption of AI Tools by Organizational/Demographic Characteristics

This section explores how AI adoption varies based on organizational characteristics such as country, industry, and organization size, as well as demographic factors, including education level, age, and coding experience.

### Adoption of AI Tools by Country

Figure 10.1 illustrates the adoption of AI tools across the top five countries based on the percentage of IT professionals currently using or planning to use these tools. The countries are ranked by the number of survey respondents and are presented from left to right along the x-axis. These countries are the United States, Germany, India, the United Kingdom, and Ukraine, with the United States having the highest number of respondents.

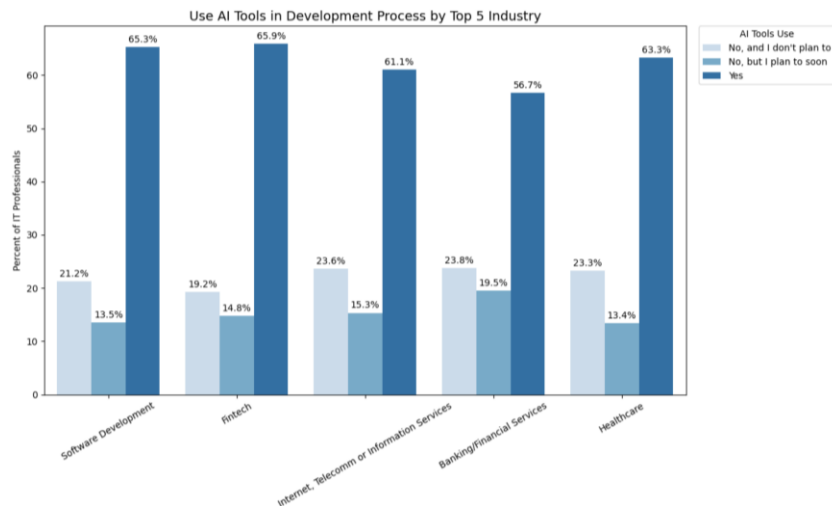


**Figure 10.1 Use AI Tools in Development Process by Top 5 Country**

The results show that Ukraine leads in adoption, with 73% of IT professionals reporting current use of AI tools, which indicates a strong embrace of AI-driven development practices. India follows closely with a 68% adoption rate, reflecting the country's dynamic and rapidly growing tech ecosystem. Germany (56.3%), the USA (55.4%), and the UK (52.6%) show similar levels of adoption, with just over half of respondents actively using AI in their development processes.

### Adoption of AI Tools by Top 5 Industry

Figure 10.2 compares AI adoption among IT professionals across key sectors. The top 5 industries are identified by the number of respondents in each industry and are presented from left to right along the x-axis. The industries are Software Development, FinTech, Internet/Telecommunication/Information Services, Banking/Financial Services, and Healthcare. The result shows that AI tools are being used widely in all five industries, though with some variation in adoption levels. Fintech leads with the highest adoption rate at 66%, closely followed by Software Development (65%) and Healthcare (63%). These sectors are known for rapid innovation and high data dependency, which likely encourages the integration of AI tools to enhance productivity, automate workflows, and improve accuracy. Internet/Telecommunication/Information Services also shows strong usage at 61%, reflecting the central role of AI in digital infrastructure and customer-facing platforms.

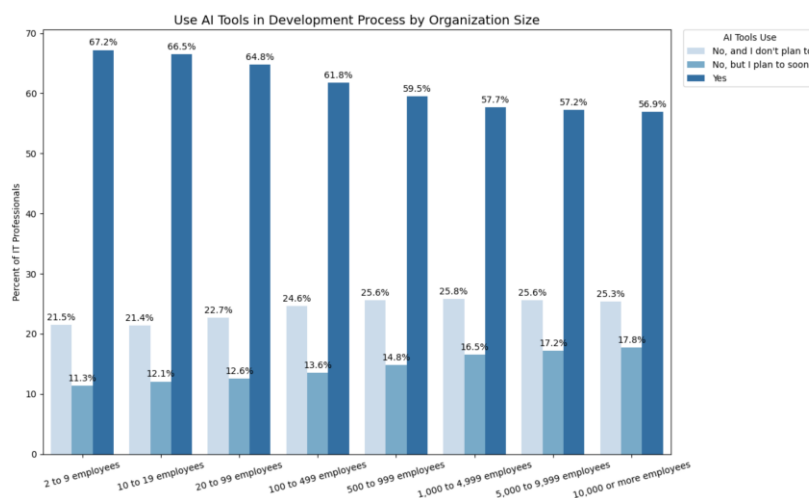


**Figure 10.2 Use AI Tools in Development Process by Top 5 Industry**

In contrast, Banking/Financial Services has the lowest reported usage at 57%, which may be due to stricter regulatory requirements, despite growing interest in AI for fraud detection, risk assessment, and client personalization (Heins, 2023).

## Adoption of AI Tools by Organization Size

Figure 10.3 illustrates how the adoption of AI tools varies by the size of an organization measured by number of employees. The results reveal that smaller organizations tend to adopt AI tools at higher rates than larger ones. Specifically, organizations with 2 to 19 employees show the highest adoption rates, with 67% and 67%, respectively, of IT professionals reporting current use of AI tools. This may reflect the agility and experimentation often associated with small teams, as well as a greater need to automate due to limited human resources.



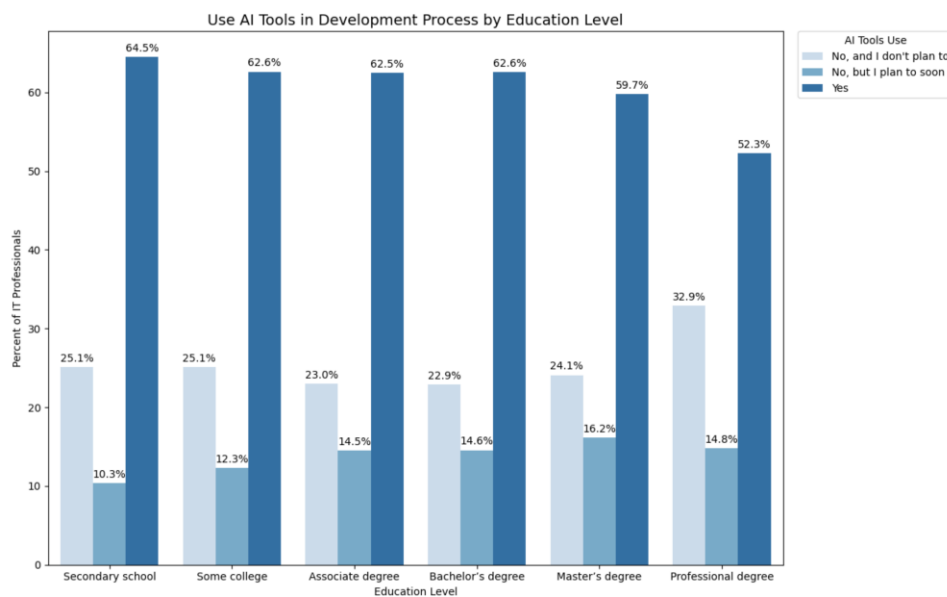
**Figure 10.3 Use AI Tools in Development Process by Organization Size**

As organization size increases, AI adoption shows a gradual decline: 65% (20–99 employees), 62% (100–499), and 60% (500–999). The largest organizations (10,000 or more employees) show the lowest rate of current adoption at 57%, though still representing a majority. This downward trend could be attributed to

more complex procurement processes, legacy systems, or stricter compliance and security protocols in larger firms.

## Adoption of AI Tools by Education Level

Figure 10.4 explores how adoption of AI tools varies across IT professionals with different educational backgrounds. The data shows that AI tool usage is consistently high across all education levels, with the adoption rate ranging from 52% to 65%. Those with secondary school education have the highest rate of AI tool use at 65%, followed closely by those with some college education (63%), associate degrees (63%), and bachelor's degrees (63%). This trend suggests that formal education beyond secondary school is not a prerequisite for adopting AI in software development; practical exposure and skill acquisition may play a more significant role. Professionals holding professional degrees show the lowest adoption rate at 52%, with a notably higher percentage (33%) stating they do not plan to use AI tools, which potentially reflects less relevance of software development tools in their day-to-day responsibilities.

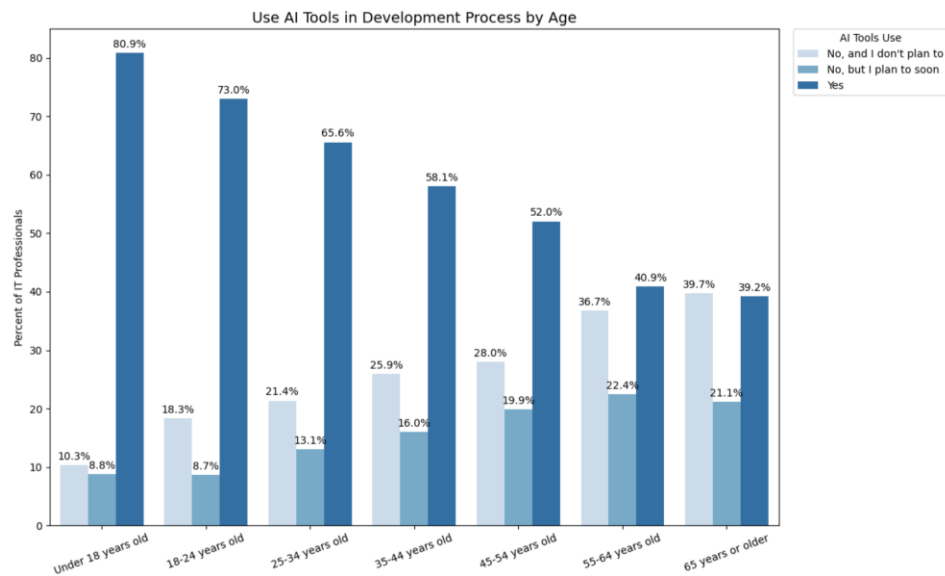


**Figure 10.4 Use AI Tools in Development Process by Education Level**

## Adoption of AI Tools by Age

Figure 10.5 shows a clear generational trend in the adoption of AI tools among IT professionals. Younger age groups report significantly higher usage, with 81% of those under 18 and 73% of those 18–24 currently using AI tools in their development work. Adoption then steadily declines with age: 66% (25–34), 58% (35–44), 52% (45–54), 41% (55–64), and finally 39% among those 65 and older.

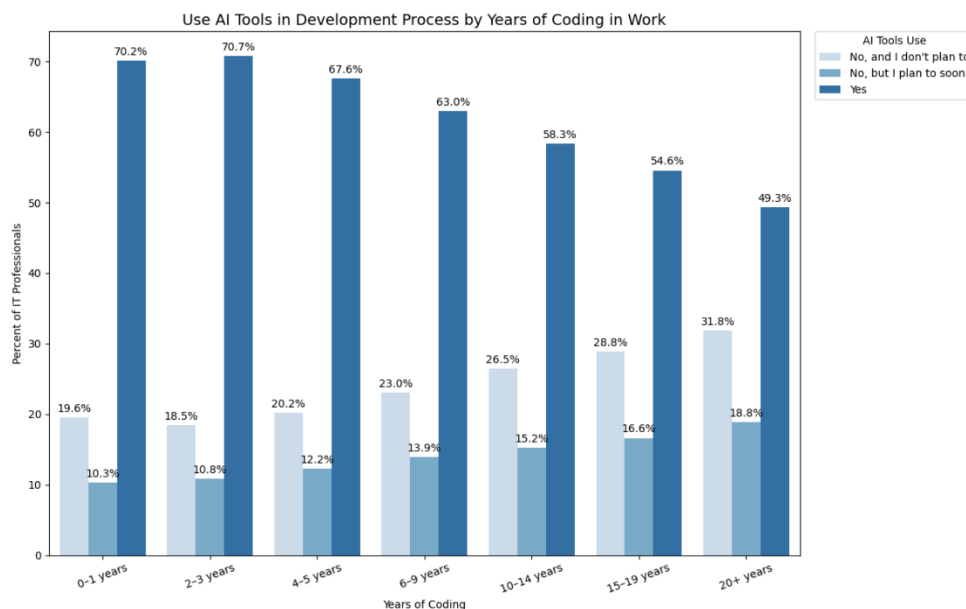
This decline suggests that younger professionals are more likely to integrate AI tools into their workflows. They may have greater familiarity with emerging technologies, recent education that includes AI training, or more flexibility in adopting new tools. In contrast, older age groups may face more barriers such as established habits or less exposure. Moreover, the percentage of those who do not use and do not plan to use AI tools increases sharply with age—from 10% (under 18) to 40% (65+). This pattern reflects growing resistance or reduced perceived relevance of AI tools among senior professionals. Interestingly, intent to adopt ("plan to use soon") peaks among the 55–64 group at 22%, suggesting that even later-career professionals remain open to future AI adoption.



**Figure 10.5 Use AI Tools in Development Process by Age**

## Adoption of AI Tools by Years of Coding Experience

Figure 10.6 highlights how experience influences AI adoption among IT professionals. The trend is clear: those with fewer years of coding experience are significantly more likely to use AI tools in their development processes. Specifically, 70% of professionals with 0–1 years and 71% with 2–3 years of coding experience reported actively using AI tools. This high uptake among newer developers suggests that AI tools are being embraced early in careers, potentially as integral components of modern programming practice. In addition, the proportion of respondents who do not use and do not plan to use AI tools grows with experience, reaching 32% in the 20+ years group. Meanwhile, intent to adopt AI tools ("plan to soon") also rises with experience, going from 10% in the 0–1 years group to 19% in the 20+ years group, indicating growing awareness and consideration of AI even among veteran developers.



**Figure 10.6 Use AI Tools by Years of Coding in Work**

## Conclusion and Implications

This study examined AI tool adoption and perceptions among IT professionals based on responses from 45,162 developers collected by Stack Overflow in May 2024. The findings reveal that a substantial majority of IT professionals are already integrating AI tools into their development workflows, with the most common applications being code generation, searching for answers, and debugging. Users cited increased productivity, accelerated learning, and improved efficiency as the primary benefits of AI tools. However, key challenges persist notably, there exists a lack of trust in AI-generated outputs and a need to overcome the tools' limited contextual understanding.

Despite these concerns, overall sentiment toward AI remains cautiously optimistic, with most professionals expressing a generally positive attitude. Ethical concerns were concentrated around the circulation of misinformation, inadequate attribution of data sources, and biased outputs lacking representational diversity. A significant portion of respondents did not view AI as a threat to their employment. The analysis also revealed significant demographic and organizational differences in adoption. Higher adoption rates were observed among younger professionals and employees at smaller organizations. Geographically, Ukraine and India reported higher adoption than the U.S., Germany, and the U.K. Across industries, FinTech, software development, and healthcare exhibited the highest rates of AI integration. These findings highlight the widespread and growing role of AI in software development while highlighting important factors that influence its adoption and perception across the global IT workforce.

The findings of this study offer several important implications for industry, educators, and policymakers aiming to support responsible and effective AI integration in the technology workforce. First, the widespread adoption of AI tools among IT professionals, particularly for tasks such as coding, debugging, and information retrieval, indicates that AI is no longer an experimental add-on but a foundational component of modern software development workflows. Second, the demographic patterns observed of higher adoption among younger professionals, less experienced developers and those in smaller or lower-paying firms suggest that AI is playing a democratizing role, lowering barriers to productivity and technical learning. Lastly, the ethical concerns voiced by professionals, especially around misinformation, data attribution, and algorithmic bias, further support the need for governance frameworks that promote transparency, fairness, and accountability in AI-assisted development. Companies and platform providers must actively engage with these concerns by implementing explainability features, maintaining rigorous data standards, and fostering ethical design practices. One limitation of this study is its reliance on secondary data from Stack Overflow, which may limit the validity of the results. In addition, the study examines AI adoption and perceptions from the perspective of IT professionals. Future research could apply more advanced methods such as regression analysis, segmentation, or hypothesis testing to uncover deeper patterns and relationships.

## References

- Ashok, M., Madan, R., Joha, A., & Sivarajah, U. (2022). Ethical framework for Artificial Intelligence and Digital technologies. *International Journal of Information Management*. 62(C). 102433. <https://doi.org/10.1016/j.ijinfomgt.2021.102433>
- Bearman, M., Ryan, J., & Ajjaw, R. (2022). Discourses of artificial intelligence in higher education: a critical literature review. *Higher Education*, 86(2). pp. 369–385.

- Budhwar, P., Malik, A., De Silva, M. T. T., & Thevisuthan, P. (2022). Artificial intelligence – challenges and opportunities for international HRM: A review and research agenda. *The International Journal of Human Resource Management*. 33(6). pp.1065–1097.
- Chintalapati, S., & Pandey, S. K. (2021). Artificial intelligence in marketing: A systematic literature review. *International Journal of Market Research*, 64(1), pp.38–68.
- Enholm, I. M. (2021). Artificial Intelligence and Business Value: a Literature Review. *Information Systems Frontiers*, 24(5), pp.1709–1734. <https://doi.org/10.1007/s10796-021-10186-w>
- Francesco Vincenzo Giarmoleo, Ferrero, I., Rocchi, M., & Pellegrini, M. (2024). What ethics can say on artificial intelligence: Insights from a systematic literature review. *Business and Society Review*. 129(2). pp.258–292. <https://doi.org/10.1111/basr.12336>
- Heins, C. (2023). Artificial intelligence in retail – a systematic literature review. *Foresight*. 25(2). pp.264–286. <https://doi.org/10.1108/fs-10-2021-0210>
- Hentzen, J. K., Hoffmann, A., Dolan, R., & Pala, E. (2021). Artificial intelligence in customer-facing financial services: a systematic literature review and agenda for future research. *International Journal of Bank Marketing*, 40(6), pp.1299–1336. <https://doi.org/10.1108/ijbm-09-2021-0417>
- Jatobá, M. N., Ferreira, J. J., Fernandes, P. O., & Teixeira, J. P. (2023). Intelligent human resources for the adoption of artificial intelligence: a systematic literature review. *Journal of Organizational Change Management*. 36(7). <https://doi.org/10.1108/jocm-03-2022-0075>
- Mehta, P., Jebarajakirthy, C., Maseeh, H. I., Anubha, A., Saha, R., & Dhanda, K. (2022). Artificial intelligence in marketing: A meta-analytic review. *Psychology & Marketing*. 39(11). pp. 2013–2038. <https://doi.org/10.1002/mar.21716>
- Nishant, R., Kennedy, M., & Corbett, J. (2020). Artificial intelligence for sustainability: Challenges, opportunities, and a research agenda. *International Journal of Information Management*. 53. 102104. <https://doi.org/10.1016/j.ijinfomgt.2020.102104>
- Ocal, A., & Crowston, K. (2024). Framing and feelings on social media: the future of work and intelligent machines. *Information Technology and People*, 37(7). pp. 2462–2488. <https://doi.org/10.1108/itp-01-2023-0049>
- Sinem Sargin. (2024). Antecedents and Consequences of Consumers Attitudes Towards Artificial Intelligence in Social Media. *Business and Economics Research Journal*. 15(3). <https://doi.org/10.20409/berj.2024.443>
- Wang, S. (2023). Factors related to user perceptions of artificial intelligence (AI)-based content moderation on social media. *Computers in Human Behavior*. 149. 107971. <https://doi.org/10.1016/j.chb.2023.107971>
- Zamani, E. D., Smyth, C., Gupta, S., & Dennehy, D. (2022). Artificial intelligence and big data analytics for supply chain resilience: a systematic literature review. *Annals of Operations Research*. 327(2). pp.605-632.