ECONOMIC FORUM
Journal homepage: https://e-forum.com.ua/en
Vol. 15, No. 3, 2025, 30-40
Article's History: Received: 05.05.2025 Revised: 01.08.2025 Accepted: 08.09.2025

UDC 005.94 *DOI: 10.62763/ef/3.2025.30*

Artificial intelligence in recruitment: Challenges, opportunities and prospects for use in Ukraine

Iryna Kinash*
Doctor of Economic Sciences, Professor
Ivano-Frankivsk National Technical University of Oil and Gas
76019, 15 Karpatska Str., Ivano-Frankivsk, Ukraine
https://orcid.org/0000-0002-5391-6560

Volodymyr Romanovych
Postgraduate Student
Ivano-Frankivsk National Technical University of Oil and Gas
76019, 15 Karpatska Str., Ivano-Frankivsk, Ukraine
https://orcid.org/0000-0003-1577-2081

Abstract. The purpose of the study was to analyse contemporary practices of using artificial intelligence in recruitment and to assess the effectiveness of these tools for future applications. It was substantiated that under the influence of digital technologies, activities related to the search and selection of personnel were being transformed. Artificial intelligence demonstrated the greatest efficiency in the processes of candidate screening, automated planning, interviewing, and collecting analytical personnel data. Ethical and legal aspects of using artificial intelligence were analysed, the distinctive features of traditional and artificial intelligence methods used at different stages of recruitment were summarised, the challenges of using artificial intelligence in recruitment were identified and solutions were proposed. The problems that occurred in companies that used AI in recruitment and the management decisions that helped to improve results were investigated. Results have demonstrated the following benefits of using artificial intelligence: saving time, improving candidate experience, and increasing overall recruiting efficiency. The study was conducted on the effectiveness of using various artificial intelligence tools for candidate assessment for the position of business analyst compared to human experts. It showed that advanced artificial intelligence tools (Claude, Grok, ChatGPT, Gemini) evaluated candidate profiles with a high level of agreement with human assessments (all $p > 0.05$), while screening more than 8 times faster – taking only 10 seconds compared to 2 minutes for a human. The potential of artificial intelligence for optimising hiring processes was confirmed. It was found that Ukraine was actively joining the global trends of HR digitisation. The share of Ukrainian companies that already used artificial intelligence recruitment reached 50.4%. The most popular were chatbots for the initial interview, candidate tracking systems with artificial intelligence elements, and tools for automatic skills testing. HR specialists in Ukraine considered the main challenges of artificial intelligence implementation to be the insufficient level of knowledge and expertise. The practical significance of the research lies in the possibility of its results being used by HR professionals, recruitment agencies, and company managers to improve the efficiency of hiring processes

Keywords: selection of personnel; recruiting; HR automation; digitalisation of hiring; efficiency

Introduction

From 2017, the labour market was highly dynamic and competitive for talented specialists, encouraging companies to look for different tools, which can help with optimisation of the recruitment process. Given the global dynamics of the development of digital technologies, the labour market is being transformed because of the in-

Suggested Citation:
Kinash, I., & Romanovych, V. (2025). Artificial intelligence in recruitment: Challenges, opportunities and prospects for use in Ukraine. *Economic Forum*, 15(3), 30-40. doi: 10.62763/ef/3.2025.30.

Copyright © The Author(s). This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/)

*Corresponding author

fluence of innovations, in particular, artificial intelligence (AI) tools. In conditions of high competition for talented specialists, conventional recruitment methods often turn out to be ineffective in terms of speed, objectivity, and costs. The use of AI in recruitment opens up new opportunities for automating routine processes, improving the quality of candidates selection, and personalising communication with candidates. As noted by S.S. Ebrahim & H.A. Rajab (2025), artificial intelligence is becoming a key factor in the formation of a modern workforce, allowing organisations to significantly increase the efficiency of recruitment processes. However, limitations of using AI tools were also noted, as they may not fully understand the main complexities of human communication and cultural context. This gap can lead to misinterpretations, biases in candidate profiling, or miscommunication during the assessment process. Meantime, the integration of AI into the field of personnel selection created new challenges related to ethics, fairness and legal regulation. M. Soleimani *et al*. (2022) emphasised the importance of understanding cognitive biases, when developing artificial intelligence systems for recruitment, given that these biases may foster discriminatory behaviour against certain groups of candidates. The researchers noted that biases can arise at different stages of using the AI, from the development of a dataset for training algorithms to the interpretation of the results. Researchers proposed a comprehensive approach to minimising these biases, including diversifying development teams and implementing mechanisms for auditing algorithms. C. Zhang *et al*. (2025) pointed out the need for a balance between efficiency and fairness, when using AI in recruitment processes. The advantages of using AI tools in recruitment at the organisational level were highlighted. These benefits included optimising overall outcomes, improving perceptions of fairness, ensuring strict compliance with legal requirements, and promoting responsible and ethical decision-making. However, attention was also drawn to the need for proper protection of the confidential data of potential job candidates.

The results of the study by P. Horodyski (2023a) showed that candidates perceive AI technology positively in hiring processes and consider it useful and easy to use. The reduced response time was recognised as the most important advantage. The lack of nuance in human judgment, low accuracy and reliability, and the immaturity of the technology, were identified as the main drawbacks of AI in recruitment. Ukrainian researchers V. Hoichuk & N. Lyubomudrova (2023) examined how and with which technologies artificial intelligence is being implemented in Ukrainian companies. They found that companies use chatbots, integrated mobile applications, augmented reality technologies, and cloud services. The identified risks included staff reductions, high capital investment required for software installation and maintenance, and the need for staff retraining. A. Sichkar (2025) suggested that a strategic framework for AI regulation has been established in Ukraine, as opposed to just legislative measures, and that the state was demonstrating determination in developing approaches to artificial intelligence – considering both European standards and national characteristics. K. Skibska (2023) argued that advanced technologies and the information environment stimulated the process of learning and acquiring new knowledge, skills, and abilities. Scenarios were considered in which the role of humans in this process could be replaced. The researcher concluded that soon artificial intelligence will transform from an innovative solution into a widely accepted tool in the recruiter's workflow. This was especially relevant for Ukraine, where the level of technological maturity of the HR sector was uneven, and the legislative field was still being formed. As noted by O. Kravchuk *et al*. (2023), Ukrainian companies demonstrated a growing interest in the digitalisation of recruitment, but faced a number of barriers, including a lack of experts and technical difficulties in integration. The purpose of the study was to investigate contemporary practices of using artificial intelligence in recruitment and evaluate the effectiveness of tools for application prospects.

Literature Review

The study of the use of artificial intelligence in the field of recruitment attracted the attention of many researchers due to the rapid development of digital technologies and their impact on human resource management processes. An analysis of the scientific literature demonstrated a variety of approaches to the investigation of this issue, covering technological, organisational, ethical, and legal aspects. O. El Ouakili (2025) analysed the impact of artificial intelligence on different stages of the hiring process, from the search for candidates to making hiring decisions. The researcher emphasised that AI can not only automate routine tasks, but also provide a more objective approach to candidate assessment and minimising human bias.

P. Horodyski (2023b) extended the Unified Adoption and Use of Technologies (UTAUT) theory to include the frequency of AI use. According to the researcher, AI is an important factor, in addition, the study showed that recruiters, who interacted with AI tools more often demonstrated a higher level of adoption of these technologies in their professional activities. This finding was supported by O. Ali & L. Kallach (2024), who in their systematic review demonstrated that AI technologies can significantly improve the efficiency of recruitment processes through automated candidate screening, intelligent talent search, and predictive analytics. T. Szandała (2025) conducted a comparative study of the effectiveness of large language models (ChatGPT, Mistral, Google Gemini) and human experts in the context of IT recruitment. The results showed that some AI models demonstrated higher consistency of assessments compared to human experts, which indicated the possibility of utilising these

technologies for standardisation candidate assessment processes. These findings were consistent with research by N. Tusquellas *et al*. (2024), who found that AI was being used to improve recruitment processes, identify individual learning and skill development needs, develop personalised learning paths, and predict employee turnover. N. Bennett & C.L. Martin (2025) examined the challenges organisational leaders face due to the growing role of AI as a talent management tool. The researchers noted that AI has already become an important element in customer-facing platforms, such as Amazon and Netflix. Companies were rapidly implementing AI to improve talent management practices, including recruiting, screening, and performance appraisal. O. Allal-Chérif *et al*. (2021) examined the application of artificial intelligence in recruitment processes, focusing on its impact on the efficiency and quality of candidate selection. The researchers emphasised that AI allowed for a significant reduction in the time required to search and assess candidates, which was especially important in conditions of high competition for talent. P. Gupta *et al*. (2024) complemented this understanding by investigating the impact of artificial intelligence on employee productivity in the digital age and analysing how AI technologies affect different aspects of work activities.

A comprehensive review of the literature on fairness in the use of AI for recruitment and selection purposes was provided by C. Rigotti & E. Fosch-Villaronga (2024). The researchers focused on a critical analysis of how the concept of fairness was interpreted and implemented in AI systems for recruitment. E.S. Tenakwah & C. Watson (2025) highlighted the important role of strategic human resource management and leadership in developing workforce capabilities for the AI-driven automation age. The researchers analysed the existing literature, the findings of sector specialists, and practical case studies to create a structure for educating and assisting employees in the artificial intelligence age. K. Dai & Q. Liu (2024) examined the use of AI in an educational context, which has important implications for the development of the skills of the future workforce. Although their focus was on learning English as a foreign language, the results of the study have broader application to understanding, how AI can transform the processes of personnel learning and development in companies. Moreover, the study conducted by S. Bankins *et al*. (2024) substantiated the next step after education – career. The researchers proved that AI affected the career trajectories of people at different stages of professional development. Using the theory of career stages, researchers considered the consequences of AI for careers, identified key barriers and enabling factors for the use of AI in this area, and also revealed how the use of AI affects people's career competencies. Thus, the review of scholarly works illustrated the diverse nature of research concerning AI implementation in hiring processes, covering technological, organisational, ethical, and legal issues. However, there was a need for a more in-depth study of the specifics of implementing AI in recruiting processes, which confirmed the importance of this investigation.

Materials and Methods

To accomplish the research objective, a combination of general scientific and specialised research methods was employed. The methodological basis of the study was a systemic approach, which allowed considering artificial intelligence in recruiting as a complex system of interconnected elements that function in a certain environment. To analyse the state of the use of artificial intelligence in recruiting, methods of theoretical generalisation, systematisation and classification were used. This allowed for the systematic arrangement of data on the key areas, where AI was applied in recruitment processes, to identify key trends and development prospects. Statistical analysis and forecasting methods were used to analyse statistical trends in the global AI-recruitment market. In particular, data on the volume of the global market for AI-recruitment solutions for the period 2020-2023 and forecasts of its development until 2030 were analysed (AI recruitment market..., 2023; Kumar, 2025). Data from LinkedIn surveys on the share of companies using AI tools in recruitment processes were also processed (Lobosco, 2024). To explore specific cases of AI integration in international enterprises, the case study technique was applied, which enabled a thorough investigation of the experience of companies such as Brother International Corporation, Electrolux Group, LinkedIn (Thomas, 2020; Electrolux Group digitalizes..., 2023; David, 2025). This allowed identifying specific advantages and challenges that companies faced, when implementing AI in recruitment processes. An experimental method was used to empirically study the effectiveness of various AI tools for assessing candidates compared to human experts. The experiment was conducted in two stages. The first stage analysed the results of the study by T. Szandała (2025), which evaluated the reliability of evaluations of candidates for the DevOps position performed by three experienced human experts and three large language models (ChatGPT, Mistral, Google Gemini). The Fleiss' Kappa index was used to assess the consistency between the evaluators. It indicated the degree of agreement above chance (ranging from -1 to 1, where 1 represented perfect agreement, 0 indicated chance-level agreement, and negative values were worse than chance). Higher index values indicated greater stability and reliability of the assessments.

The second stage included empirical study, which compared the effectiveness of assessments of AI tools (Claude, Grok and Google Gemini) with human experts in assessing candidates for the position of Business Analyst. For this purpose, 3 LinkedIn profiles of Kvitoslava Maksymiv (n.d.), Mariana Beznosova (n.d.), Sophia Ishchiv (n.d.) and 3 experts were selected, who evaluated them according to five criteria: education, technical skills, work experience, certificates, and project complexity.

The experts evaluated using a 5-point scale, where 5 – the highest value and 1 – the lowest. The Student's t-test was used for statistical analysis of the results. To analyse the state and prospects of artificial intelligence recruitment evolution in Ukraine, documentary analysis and secondary data assessment methods were utilised. In particular, the research outcomes of the portal Robota.ua (2024) on the use of AI tools in recruitment processes by Ukrainian companies, along with regulatory framework governing artificial intelligence implementation in Ukraine, for example, Order of the Cabinet of Ministers of Ukraine No. 1556-r (2020), were analysed. The comprehensive use of these methods facilitated a comprehensive analysis of the issues of using artificial intelligence in recruitment and helped to achieve the set goal of the study.

Results and Discussion

The contemporary labour market is characterised by high dynamism and competition for talented specialists, which encourages companies to look for effective tools to optimise the recruitment process. Artificial intelligence is becoming one of the promising areas of development of recruitment services, as it offers innovative solutions for automating and improving personnel selection processes. The introduction of artificial intelligence technologies in recruitment allowed companies not only to speed up the hiring process, but also to increase its quality, objectivity, and efficiency. Although AI can help managers to make decisions, it can also create problems, such as bias in data sets and algorithms. The implementation of AI in human resources recruitment demonstrated a steady growth trend worldwide. As can be seen from Figure 1, the global AI recruiting solutions market grew from USD 380.6 million in 2020 to USD 661.56 million in 2023 and is projected to reach over USD 1,119.8 billion by 2030. This corresponded to a CAGR of about 6.7% and reflected the rapid adoption of such technologies in business processes.

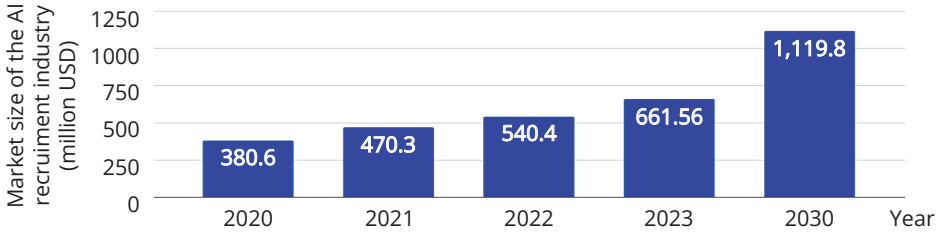

Figure 1. *Global AI recruitment market (estimated volume), 2020-2030*
Source: *AI recruitment market: Global industry analysis and forecast (2024-2030) (2023)*

In addition to financial indicators, the share of companies using AI-based recruitment tools was also growing. The results of a survey by Waytogo Consultants showed that in 2023, 44% of employers involved AI at various stages of recruitment, while in 2019 there were significantly fewer of them (March 2025 recruitment insights..., 2025). A. Rukadikar *et al*. (2025) suggested that the integration of artificial intelligence into the recruitment process had become widespread, as it helped organisations to align recruitment strategies with overall business goals. AI has effectively revolutionised the way organisations and industries conduct recruitment. O. El Ouakili (2025) found that companies using AI in recruitment achieved a 50% reduction in time to hire and significant cost savings. Artificial intelligence was utilised at different points in the recruitment process, encompassing activities such as sourcing and engaging candidates, screening resumes, conducting interviews, evaluating applicants, and making final hiring decisions. AI-driven candidate sourcing and screening utilised sophisticated natural language processing technologies to efficiently examine and interpret vast numbers of resumes in just a few minutes. In addition, the researcher noted that AI systems can evaluate resumes according to predetermined parameters like competencies, experience, and education. The use of this technology dramatically shortens the time recruiters typically devote to manual candidate screening – often reducing a process that could take weeks and accelerating the initial stages of selection. Organisations depended on recruitment agencies to reach passive candidates, but this approach was limited by the agencies' own networks and databases, resulting in high costs. Consequently, only a small number of organisations adopted this method, which kept competition for passive candidates low. AI-powered recruitment solutions addressed these challenges by enabling companies to avoid agency fees and directly access millions of passive candidates through platforms like Facebook and LinkedIn, making the process more affordable. The integration of virtual reality into interviews helped to minimise bias and enhanced the efficiency of the interview process. Additionally, real-time feedback and sentiment analysis offerred immediate responses to candidates during the application stage, ensuring a smooth and engaging experience. Scheduling was another vital aspect of recruitment that can be greatly improved with AI. Automated scheduling tools streamline the coordination of interviews among various stakeholders, minimising the back-and-forth communication that often caused delays and scheduling issues. A comparison of conventional and AI methods used for different stages of the recruitment process was presented in Table 1.

Table 1. *Comparison of conventional and AI recruitment methods*

Recruitment stage	Conventional methods	AI-based methods
Candidate search	Posting job advertisements, using contact networks, working through agencies	Social media analysis, predictive analytics, targeted passive candidate acquisition
CV screening	Manual review of resumes, basic keyword screening	Natural language processing, semantic analysis, machine learning-based fit assessment
Interviewing	Phone, video or in-person interviews	Automated video interviews with facial expression and speech analysis, chatbots for initial interviews
Candidate assessment	Subjective assessment of interviewers, skills testing	Intensive data analysis from multiple sources, performance prediction
Decision making	Based on personal preferences and intuition. Depends on the experience and skills of the recruiter	Data-driven and algorithmic best fit analysis
Adaptation	Standardised onboarding programmes	Personalised adaptation programmes based on candidate profile

Source: *based on O. El Ouakili (2025), C. Zhang et al. (2025), S.S. Ebrahim & H.A. Rajab (2025)*

The biggest advantage of using AI in recruitment is the increased efficiency and accuracy of processes. A. Rukadikar *et al*. (2025) proved that organisations using AI-based recruitment solutions saw a 25% reduction in average time to fill vacancies compared to those relying on traditional methods. Ultimately, this leads to better job outcomes. However, despite the benefits of using AI tools, there were also certain risks, especially the risk of bias and discrimination. While AI was capable of successfully completing tasks such as resume screening and interview analysis, the underlying model may not accurately assess candidates' abilities or job suitability because of its limitations. Therefore, some qualified candidates may be unfairly rejected, while others, who were poorly suited for the role may be selected, which undermined fairness. An unbalanced training dataset that over-represents certain groups or minorities may introduce various biases.

C. Zhang *et al*. (2025) argued that historical bias reinforced existing inequalities by continuing discrimination against certain groups within the hiring process. Aggregation bias occurs, when a single model fails to accurately represent the diversity of different groups, thereby disadvantageous to some candidates during selection. For instance, an algorithm trained on data reflecting male dominance in technical or engineering roles may overlook qualified female candidates for these positions. Algorithmic decisions can also provoke negative emotional responses, such as anger, among applicants or employees. To encourage acceptance of these systems, a balanced approach was implemented, where algorithms generate recommendations, but humans conduct the final review and make the ultimate decisions. While this hybrid method promoted fairness, it also introduced human involvement that can reduce the efficiency of fully automated decision-making. While AI tools in recruitment can efficiently process applications for large numbers of candidates, they often fail to ensure fair participation for underrepresented groups, revealing a trade-off between efficiency and fairness. The challenges of using artificial intelligence in recruitment and possible solutions were presented in Table 2.

Table 2. *Challenges of using AI in recruitment and solutions*

Challenge	Description	Solutions
Algorithmic bias	AI can adopt and reinforce existing biases in the training data	Application of diverse and balanced datasets; implementation of routine algorithmic fairness evaluations
Limited data sets	Insufficient data to train AI on certain groups of candidates	Enrichment of data; engagement of experts from different industries to validate models
Data privacy	Collection and use of candidates' personal data	Transparent data policies; obtain explicit consent; comply with GDPR and other regulatory requirements
Technical complexities	Complexity of implementing and maintaining AI systems	Gradual implementation; collaboration with technical experts; regularly train staff
Human oversight	Definition of the role of humans in decision-making	Hybrid approach, where AI provides recommendations and humans make the final decision
Ethical considerations	Issues of fairness, transparency and accountability	Development of ethical principles for the use of AI, engagement of ethics committees

Source: *based on O. El Ouakili (2025), C. Zhang et al. (2025), N. Kumar (2025)*

Thus, algorithmic bias was determined by the fact that AI can reflect and even reinforce biases that already existed in the training data. This meant that algorithms may unjustly assess candidates based on gender, ethnicity, or other characteristics. To minimise this risk, it was important to use diverse, balanced datasets and to regularly evaluate the fairness of algorithms. Limited data sets – for certain professions or groups of

candidates, there may be a lack of sufficient quality data. This reduced the effectiveness and accuracy of AI-driven decisions. One way to address this was by expanding data sets and involving experts from various industries to review the models. In addition, processing of candidates' personal data required clear and transparent data protection policies, obtaining users' consent, and full compliance with GDPR and other relevant privacy regulations. Implementation and maintainance of AI systems in recruitment was a complex process that required resources and expertise. This included integrating new technologies, training personnel, and providing ongoing system support. Human oversight – it was crucial to clearly define the role of humans in decision-making about candidates. The most effective approach was usually a hybrid one, where AI assisted, but final decisions were made by humans. The use of AI should be based on ethical principles – ensuring transparency, explainability, and accountability of decisions. It was advisable to involve ethics committees and to develop relevant internal organisational policies. Minimising these challenges will largely depend on the professional approach of recruiters to the hiring process, adherence to regulatory requirements, and compliance with ethical principles. To understand the practical value of using AI in recruiting, Table 3 had been created.

Table 3. *Example of companies using AI in recruitment*

Company	Problem	Solutions	Results
Brother International Corporation	The company needed to improve its employer brand and enhance candidate engagement, while maintaining high recruitment quality standards	Brother International implemented an AI-powered platform that included personalised job recommendations, interactive chatbots for candidate engagement, an enhanced AI-integrated career site, and automated candidate screening tools	1) Increase in completed applications by 140% in three weeks. 2) Significantly improve employer brand visibility. 3) Optimise talent acquisition and candidate engagement
Electrolux Group	Electrolux Group was experiencing inefficiencies in its recruitment process due to lengthy manual interview scheduling and a high rate of incomplete applications	The company implemented the Phenom Intelligent Talent Experience platform. It includes AI-driven role matching, video assessments, automated interview scheduling, and comprehensive candidate engagement tools	1) 84% increase in application conversion. 2) 51% reduction in open applications. 3) 9% reduction in time to hire. 4) 78% reduction in time to coordinate recruitment
LinkedIn	LinkedIn sought to streamline the hiring process, automate routine tasks, and improve the quality of candidate interactions	LinkedIn launched Hiring Assistant, an AI-powered agent that automates up to 80% of the offer process. The assistant integrates into LinkedIn's workflow, leveraging candidate profile analysis, recruiter experience memory, and personalised recommendations	1) Reduce candidate search time from 15 minutes to 30 seconds. 2) Increase recruiter productivity and candidate quality. 3) Improve candidate experience by automating routine tasks

Source: *based on J. Thomas (2020), Electrolux Group digitalizes key HR processes for distinct hiring edge (2023), M. Lobosco (2024), LinkedIn enters AI agent race with linkedin hiring assistant (2024), M. David (2025)*

These cases demonstrated significant benefits of using AI to optimise the recruitment process, including time savings, improved candidate experience, and increased efficiency. During 2020-2023, companies have increasingly implemented new AI tools in their work to perform various tasks. The most time-consuming task for recruiting teams was screening (reviewing) a candidate's profile, evaluating it, and making a decision to understand whether to invite the candidate to the next recruitment stage – an interview or a test task. T. Szandała (2025) presented the consistency of assessments of candidates for a DevOps position performed by three experienced human experts and three large language models (ChatGPT, Mistral, Google Gemini). To assess the agreement between raters, the Fleiss' Kappa index was used, which showed the degree of agreement above chance (from -1 to 1, where 1 – perfect agreement, 0 – chance, and negative values – worse than chance). Higher index values indicated greater stability and reliability of the ratings (Table 4).

Table 4. *Comparison of the values of the ratings of human experts and AI tools*

Indicator	Human experts	ChatGPT	Mistral	Google Gemini
Average criterion score	0.582	0.432	0.790	0.824
Average assessment time (minutes)	2.5-3.7	~0.17 (10 seconds)	~0.17 (10 seconds)	~0.17 (10 seconds)
Reliability of assessments	Moderate, depends on the expert	Moderate	High	High

Source: *based on T. Szandała (2025)*

The Fleiss' Kappa index for human experts averages 0.582, indicating moderate agreement between ratings. ChatGPT has an average of 0.432, which was below human levels. Mistral and Google Gemini models showed higher agreement, 0.790 and 0.824, respectively, exceeding human levels. AI assessment times were approximately 15 times faster than humans, making them attractive for improving recruitment efficiency. Therefore, the findings indicated that Mistral and Google Gemini models significantly exceed the agreement of human experts, while ChatGPT has moderate agreement, but lower than other AI. This illustrated the capability of contemporary LLMs in assessment standardisation, while also emphasising the variations in model behaviour. However, despite better agreement, AI does not always replace the human factor, especially on complex or subjective questions. This data indicated that a balanced approach combining the use of AI with human experience and expertise was appropriate. A study was conducted using Student's t-test to compare the effectiveness of the assessments of AI tools Claude, Grok, and Google Gemini with human experts. The evaluation of applicants was conducted for the position of Business Analyst, based on the candidates' LinkedIn profiles. To do this, first of all, the criteria for assessing candidates were defined: 1) education – correspondence of the speciality (e.g., IT, economics, MBA); 2) technical skills – mastery of tools (SQL, Python, Tableau, Jira, BPMN); 3) work experience – number of years in business analysis, correspondence of the industry (IT, finance); 4) certificates – availability of certificates (CBAP, PMI-PBA, Scrum Master, TOGAF, PMP); 5) project complexity – management of complex projects (e.g., systems integration, large-scale changes). For the reliability of the study, 3 LinkedIn profiles by Kvitoslava Maksymiv (n.d.), Mariana Beznosova (n.d.), and Sophia Ishchiv (n.d.) of candidates for the position of Business Analyst and 3 experts, who will evaluate them were selected. The average score of the experts' evaluation and the evaluation of the AI tools were presented in Table 5.

Table 5. *Evaluations of the candidates of human experts and AI tools*

Candidate	Criterion	Human expert	ChatGPT	Claude	Grok	Gemini
1	Education	4	5	4	4	5
1	Technical skills	3	4	3	4	5
1	Work experience	4	4	5	5	5
1	Certificates	2	3	2	2	3
1	Project complexity	5	5	4	4	5
2	Education	3	4	3	3	5
2	Technical skills	4	5	4	5	4
2	Work experience	2	3	2	2	3
2	Certificates	1	2	1	1	2
2	Project complexity	3	4	3	3	4
3	Education	5	5	5	5	5
3	Technical skills	5	5	5	5	5
3	Work experience	5	5	5	5	5
3	Certificates	4	4	4	4	4
3	Project complexity	5	5	5	5	5

Source: *based on Kvitoslava Maksymiv (n.d.), Mariana Beznosova (n.d.), Sophia Ishchiv (n.d.)*

According to the results of the study, the AI tool Google Gemini received the highest expert ratings for the criteria of "education" and "project complexity". The criterion of "certificates" was found to be the most challenging in terms of considering candidate requirements. The results of the t-test comparing the estimates of human experts with AI tools were presented in Table 6.

Table 6. *Results of the Student's t-test*

Criterion	Human experts vs ChatGPT (t/p)	Human experts vs Claude (t/p)	Human experts vs Grok (t/p)	Human experts vs Gemini (t/p)
Education	-2.00/0.184	NaN/NaN	NaN/NaN	-2.00/0.184
Technical skills	-2.00/0.184	NaN/NaN	-2.00/0.184	-1.73/0.225
Work experience	-1.00/0.423	-1.00/0.423	-1.00/0.423	-2.00/0.184
Certificates	-2.00/0.184	NaN/NaN	NaN/NaN	-2.00/0.184
Project complexity	-1.00/0.423	1.00/0.423	1.00/0.423	-1.00/0.423

Note: *NaN – the values in the two compared groups are completely identical, so the difference between them cannot be calculated, (t/p) – for each criterion, the table shows the t-statistic and p-value in the (t/p) format, based on a paired t-test for human experts compared to each AI tool*
Source: *developed by the authors*

It was important to note that NaN values arose due to the same scores for all candidates in the respective comparisons (standard deviation = 0), so the t-test cannot be calculated. It was proven that none of the AI tools (ChatGPT, Claude, Grok, Gemini) showed statistically significant differences compared to human scores for any criterion (all p-values > 0.05). This indicated that AIs can effectively imitate the human approach to assessing business analyst profiles. Thus, it was found that Claude and Grok demonstrated the greatest similarity to human scores, especially for the criteria "Education" and "Work experience". However, Gemini tends to overestimate scores in "Technical skills" and "Certificates" – its results require additional verification. The least reliable tool was ChatGPT, which showed stability, but it should be utilised alongside additional tools to decrease the potential for biased errors. The central aspect that revealed the success of implementing AI tools in screening candidate profiles was the time spent. After all, reducing costs was equal to reducing the cost of hiring a candidate. According to the study, AI tools evaluated a candidate more than 8 times faster than experts from Sourcing. The average time for evaluating a candidate according to the specified criteria was presented in Table 7.

Table 7. *Average time for evaluating a candidate according to the specified criteria*

Appraiser	Average time (minutes)
Human experts	2
ChatGPT	0.167 (~10 seconds)
Claude	0.167 (~10 seconds)
Grok	0.167 (~10 seconds)
Gemini	0.167 (~10 seconds)

Source: *developed by the authors*

Therefore, based on the research, it is possible to enhance the performance of recruiting teams by using tools such as Claude and Grok, as they showed the greatest similarity in assessment. Advanced AI tools can efficiently and rapidly conduct initial screening of candidates, as demonstrated in the example of the Business Analyst position, but for the final selection of a candidate, human expertise remained critically important. During 2020-2025 Ukraine was actively joining the global trends of HR digitalisation, although the level of AI implementation in recruitment still lags behind leading economies. According to the results of a study by the portal Robota.ua (2024), half of Ukrainian companies (50.4%) were already using AI tools in recruitment processes. Most often, Ukrainian employers used AI for searching and pre-selection of candidates (54% of respondents), assessing candidates (46%), and for automating interview planning and HR analytics (38%). Among the specific solutions that have gained popularity in Ukraine were chatbots for initial interviews, applicant tracking systems (ATS) with AI elements, and tools for automatic skills testing. These technologies were especially in demand in the IT sector and large outsourcing companies that process a large number of applications and resumes every month. Moreover, there was a significant share of Ukrainian businesses that were only looking at the possibilities of AI.

Aproximately 49.6% of companies have not yet decided on plans for implementing AI in the 2026-2027. Among those who have a vision, almost a third (32.2%) plan to actively implement new AI tools, 15.7% have limited use for individual tasks, and only ~2.5% deliberately refuse to use AI. This indicated that the potential for growth of AI recruiting in Ukraine is very large, provided that certain barriers are overcome. Ukrainian HR specialists call the main challenges of AI implementation an insufficient level of knowledge and expertise (this factor was noted by 63% of respondents), concerns about information security and data confidentiality (46%), technical difficulties in integrating with existing systems (35%). There were also institutional barriers – resistance from staff or management (22%), who may be afraid of automation, and the high cost of implementing AI solutions (21%). It is positive that 21% of respondents do not see any obstacles and are ready to experiment with AI, but for the technology to spread widely, these problems need to be addressed. The future potential of AI recruitment development in Ukraine was connected, on one side, to internal factors (business demand for HR optimisation, the availability of IT talents, who can develop such solutions), and on the other side, to external factors, including European integration. Ukraine was already adapting its legislation to EU data protection requirements (Complete guide to GDPR..., n.d.), which created a regulatory framework for the responsible use of AI in HR. The government has also endorsed the Order of the Cabinet of Ministers of Ukraine No. 1556-r (2020), which defined priorities for supporting AI technologies, including in the field of employment and personnel management. In the post-war period, an active economic recovery is expected, accompanied by growth in the labour market – at this time, AI recruitment can become one of the drivers of effective recruitment for the reconstruction of the country. Ukrainian HR platforms (e.g. Robota.ua, Work.ua) were already implementing AI elements in their services – from smart resume search to job recommendations – and this trend will only grow.

Conclusions

The use of AI in recruitment demonstrated a steady global growth trend. According to forecasts, the global AI recruitment solutions market will exceed USD 1,119.8 billion by 2030. This will impact human resource management processes, particularly by accelerating the adoption of artificial intelligence in recruitment. The study analysed the practices in the use of AI in recruitment and evaluated the effectiveness of these tools. A comparison between conventional and AI-based recruitment methods was presented. It has been established that AI recruitment offerred numerous advantages, such as increased efficiency, reduced bias, and improved candidate experience. AI algorithms enabled faster and more accurate candidate selection, saving recruiters' time and resources. This also contributed to expanding the pool of relevant candidates and improving hiring quality through data-driven analytics.

However, the implementation of AI in recruitment was not without challenges. These included ethical concerns, algorithmic bias, the risk of depersonalising the hiring process, limited data sets, technical complexities, and the need for ongoing oversight. These challenges can be addressed through a balanced approach that combined AI with human expertise and experience. The study found that AI tools such as Claude, Grok, ChatGPT, and Gemini assessed candidate profiles with a level of consistency comparable to human reviewers (all $p > 0.05$), but complete the screening process more than eight times faster – taking only 10 seconds, compared to 2 minutes for a human. This confirmed the potential of artificial intelligence to optimise hiring processes. To achieve successful outcomes, organisations should integrate AI into their recruitment strategies, taking ethical considerations into account and ensuring continuous monitoring. This will not only increase the efficiency and objectivity of the process, but also foster the development of these approaches in recruitment and improve the overall candidate experience. In Ukraine, AI recruitment has significant prospects. To realise this potential, it is necessary to invest in training HR professionals to work with AI, develop local solutions tailored to the specifics of the Ukrainian labour market, and build candidate trust. Addressing concerns and resolving ethical issues will be critical – only with responsible implementation can AI bring maximum benefit to Ukrainian companies and job seekers, accelerating and improving the quality of hiring processes. Further research should focus on assessing the readiness for AI recruitment adoption in the Ukrainian labour market.

Acknowledgements

None.

Funding

None.

Conflict of Interest

None.

References

[1] AI recruitment market: Global industry analysis and forecast (2024-2030). (2023). *Maximize Market Research*. Retrieved from https://www.maximizemarketresearch.com/market-report/global-ai-recruitment-market/63261/.

[2] Ali, O., & Kallach, L. (2024). Artificial intelligence enabled human resources recruitment functionalities: A scoping review. *Procedia Computer Science*, 232, 3268-3277. doi: 10.1016/j.procs.2024.02.142.

[3] Allal-Chérif, O., Aránega, A.Y., & Sánchez, R.C. (2021). Intelligent recruitment: How to identify, select, and retain talents from around the world using artificial intelligence. *Technological Forecasting and Social Change*, 169, article number 120822. doi: 10.1016/j.techfore.2021.120822.

[4] Bankins, S., Jooss, S., Restubog, S.L.D., Marrone, M., Ocampo, A.C., & Shoss, M. (2024). Navigating career stages in the age of artificial intelligence: A systematic interdisciplinary review and agenda for future research. *Journal of Vocational Behavior*, 153, article number 104011. doi: 10.1016/j.jvb.2024.104011.

[5] Bennett, N., & Martin, C.L. (2025). AI as a talent management tool: An organizational justice perspective. *Business Horizons*, 68(3), 215-226. doi: 10.1016/j.bushor.2025.03.005.

[6] Complete guide to GDPR compliance. (n.d.). *GDPR.EU*. Retrieved from https://gdpr.eu/.

[7] Dai, K., & Liu, Q. (2024). Leveraging artificial intelligence (AI) in English as a foreign language (EFL) classes: Challenges and opportunities in the spotlight. *Computers in Human Behavior*, 159, article number 108354. doi: 10.1016/j.chb.2024.108354.

[8] David, M. (2025). Real-life examples of AI-driven candidate screening. *MiHCM*. Retrieved from https://mihcm.com/resources/blog/real-life-examples-of-ai-driven-candidate-screening/.

[9] Ebrahim, S.S., & Rajab, H.A. (2025). The future of HR: The role of AI-powered recruitment in shaping the modern workforce. *Open Access Library Journal*, 12, article number e12770. doi: 10.4236/oalib.1112770.

[10] El Ouakili, O. (2025). The impact of artificial intelligence (AI) on recruitment process. *Open Journal of Business and Management*, 13(2), 749-762. doi: 10.4236/ojbm.2025.132039.

[11] Electrolux Group digitalizes key HR processes for distinct hiring edge. (2023). *Phenom People, Inc*. Retrieved from https://assets.phenom.com/hubfs/02_Assets/casestudy/230502_EN-CS_Electrolux_PhenomSuccess.pdf.

[12] Gupta, P., Lakhera, G., & Sharma, M. (2024). Examining the impact of artificial intelligence on employee performance in the digital era: An analysis and future research direction. *The Journal of High Technology Management Research*, 35(2), article number 100520. doi: 10.1016/j.hitech.2024.100520.
[13] Hoichuk, V., & Lyubomudrova, N. (2023). Application of artificial intelligence for the development of the human capital of the organization. *Digital Economy and Economic Security*, 8, 67-73. doi: 10.32782/dees.8-12.
[14] Horodyski, P. (2023a). Applicants' perception of artificial intelligence in the recruitment process. *Computers in Human Behavior Reports*, 11, article number 100303. doi: 10.1016/j.chbr.2023.100303.
[15] Horodyski, P. (2023b). Recruiter's perception of artificial intelligence (AI)-based tools in recruitment. *Computers in Human Behavior Reports*, 10, article number 100298. doi: 10.1016/j.chbr.2023.100298.
[16] Kravchuk, O., Varis, I., & Pierkova, M. (2023). Modern practices of using artificial intelligence for digitalization of recruitment. *Problems of Modern Transformations. Series: Economics and Management*, 8. doi: 10.54929/2786-5738-2023-8-04-06.
[17] Kumar, N. (2025). AI recruitment statistics 2025 (Worldwide data & insights). *DemandSage*. Retrieved from https://www.demandsage.com/ai-recruitment-statistics/.
[18] Kvitoslava Maksymiv. (n.d.). *LinkedIn*. Retrieved from https://www.linkedin.com/in/kvitoslava-maksymiv/.
[19] LinkedIn enters AI agent race with LinkedIn hiring assistant. (2024). *Josh Bersin*. Retrieved from https://joshbersin.com/2024/10/linkedin-enters-ai-agent-race-with-linkedin-hiring-assistant/.
[20] Lobosco, M. (2024). See the early impact of LinkedIn's AI tools for recruiters. *LinkedIn*. Retrieved from https://www.linkedin.com/business/talent/blog/talent-acquisition/early-impact-of-linkedin-ai-tools-for-recruiters.
[21] March 2025 recruitment insights: AI, hiring trends & career growth. (2025). *Waytogo Consultants*. Retrieved from https://www.linkedin.com/pulse/march-2025-recruitment-insights-ai-hiring-trends-career-2mbjf.
[22] Mariana Beznosova. (n.d.). *LinkedIn*. Retrieved from https://www.linkedin.com/in/mariana-beznosova-638a9081/.
[23] Order of the Cabinet of Ministers of Ukraine No. 1556-r "On Approval of the Concept of Artificial Intelligence Development in Ukraine". (2020, December). Retrieved from https://zakon.rada.gov.ua/laws/show/1556-2020-%D1%80#Text.
[24] Rigotti, C., & Fosch-Villaronga, E. (2024). Fairness, AI & recruitment. *Computer Law & Security Review*, 53, article number 105966. doi: 10.1016/j.clsr.2024.105966.
[25] Rukadikar, A., Khandelwal, K., & Warrier, U. (2025). Reimagining recruitment: Traditional methods meet AI interventions – a 20-year assessment (2003-2023). *Cogent Business & Management*, 12(1), article number 2454319. doi: 10.1080/23311975.2025.2454319.
[26] Sichkar, A. (2025). Is Ukraine ready for full-fledged regulation of artificial intelligence? Under what conditions is this possible? *Mind.ua*. Retrieved from https://mind.ua/openmind/20287391-chi-gotova-ukrayina-do-povnocinnogo-regulyuvannya-shi.
[27] Skibska, K. (2023). The use of artificial intelligence tools in recruitment. *Galician Economic Journal*, 83(4), 114-121. doi: 10.33108/galicianvisnyk_tntu2023.04.114.
[28] Soleimani, M., Intezari, A., & Pauleen, D.J. (2022). Mitigating cognitive biases in developing AI-assisted recruitment systems: A knowledge-sharing approach. *International Journal of Knowledge Management*, 18(1), 1-18. doi: 10.4018/IJKM.290022.
[29] Sophia Ishchiv. (n.d.). *LinkedIn*. Retrieved from https://www.linkedin.com/in/sophiaishchiv/.
[30] Szandała, T. (2025). ChatGPT vs human expertise in the context of IT recruitment. *Expert Systems with Applications*, 264, article number 125868. doi: 10.1016/j.eswa.2024.125868.
[31] Tenakwah, E.S., & Watson, C. (2025). Embracing the AI/automation age: Preparing your workforce for humans and machines working together. *Strategy & Leadership*, 53(1), 32-48. doi: 10.1108/SL-05-2024-0040.
[32] Thomas, J. (2020). How Brother International Corporation reinvented its employer brand with phenom career site, CMS & hosted apply. *Phenom*. Retrieved from https://www.phenom.com/blog/how-brother-international-corporation-reinvented-its-employer-brand.
[33] Tusquellas, N., Palau, R., & Santiago, R. (2024). Analysis of the potential of artificial intelligence for professional development and talent management: A systematic literature review. *International Journal of Information Management Data Insights*, 4(2), article number 100288. doi: 10.1016/j.jjimei.2024.100288.
[34] Zhang, C., Li, S., Liu, Y., Li, Y., & Zhu, J. (2025). Artificial intelligence recruitment – a literature review based on equity and efficiency perspectives. *Journal of Human Resource Development*, 7(1), 15-21. doi: 10.23977/jhrd.2025.070103.

Штучний інтелект у рекрутингу: виклики, можливості та перспективи використання в Україні

Ірина Кінаш
Доктор економічних наук, професор
Івано-Франківський національний технічний університет нафти і газу
76019, вул. Карпатська, 15, м. Івано-Франківськ, Україна
https://orcid.org/0000-0002-5391-6560

Володимир Романович
Аспірант
Івано-Франківський національний технічний університет нафти і газу
76019, вул. Карпатська, 15, м. Івано-Франківськ, Україна
https://orcid.org/0000-0003-1577-2081

Анотація. Метою дослідження було проаналізувати сучасні практики використання штучного інтелекту в рекрутингу та оцінити ефективність цих інструментів для майбутнього застосування. Було обґрунтовано, що під впливом цифрових технологій трансформуються види діяльності, пов'язані з пошуком і відбором персоналу. Штучний інтелект продемонстрував найбільшу ефективність у процесах відбору кандидатів, автоматизованого планування, проведення інтерв'ю та збору аналітичних даних про персонал. Проаналізовано етичні й правові аспекти використання штучного інтелекту, узагальнено відмінності між традиційними та інтелектуальними методами, що застосовуються на різних етапах рекрутингу, визначено проблеми використання штучного інтелекту у відборі персоналу та запропоновано шляхи їх вирішення. Досліджено проблеми, що виникали у компаніях, які застосовували штучний інтелект в рекрутингу, та управлінські рішення, які допомогли покращити результати. Результати продемонстрували такі переваги використання штучного інтелекту: економія часу, покращення досвіду кандидатів та підвищення загальної ефективності рекрутингу. Дослідження проводилося щодо ефективності використання різних інструментів штучного інтелекту для оцінки кандидатів на посаду бізнес-аналітика порівняно з оцінками людей-експертів. Показано, що сучасні інструменти штучного інтелекту (Claude, Grok, ChatGPT, Gemini) оцінювали профілі кандидатів із високим рівнем узгодженості з людськими оцінками (усі $p > 0,05$), водночас проводячи відбір більш ніж у 8 разів швидше – лише за 10 секунд проти 2 хвилин у людини. Підтверджено потенціал штучного інтелекту для оптимізації процесів найму. Встановлено, що Україна активно долучається до світових трендів цифровізації HR. Частка українських компаній, які вже застосовували штучний інтелект у рекрутингу, досягла 50,4 %. Найпопулярнішими були чат-боти для початкового інтерв'ю, системи відстеження кандидатів з елементами штучного інтелекту та інструменти автоматичного тестування навичок. Основними викликами впровадження штучного інтелекту HR-фахівці в Україні вважали недостатній рівень знань і компетентності. Практичне значення дослідження полягає у можливості використання його результатів HR-фахівцями, рекрутинговими агентствами та менеджерами компаній для підвищення ефективності процесів найму

Ключові слова: добір персоналу; рекрутинг; HR-автоматизація; цифровізація найму; ефективність