

Meshcheriakov Dmytro
PhD in Psychology,
Deputy Director
for Scientific and Experimental Work,
G.S. Kostiuk Institute of Psychology
of the NAES of Ukraine
meoldom@gmail.com
<https://orcid.org/0000-0001-6831-8654>

Prospects for the Application of AI in Career Support for Adults

Abstract. *The prospects of applying AI chatbots in adult's career counseling, their effectiveness, limitations, and possibilities of integration into the Ukrainian context are analyzed.*

Keywords: *Artificial intelligence; career; career counseling; chatbots; career theories; psychological support; Ukraine.*

Мещеряков Д.С.
кандидат психологічних наук,
заступник директора
з науково-експериментальної роботи,
Інститут психології імені Г.С. Костюка НАПН України

Перспективи застосування ШІ в кар'єрному супроводі дорослих

Анотація. Проаналізовано перспективи застосування ШІ-чат-ботів у кар'єрному консультуванні дорослих, їхню ефективність, обмеження та можливості інтеграції в український контекст.

Ключові слова: Штучний інтелект; кар'єра, кар'єрне консультування; чат-боти; теорії кар'єри; психологічна підтримка; Україна.

Record levels of investment and the rapid development of the AI sector continue to transform the labor market by automating routine tasks and creating new occupations. A study conducted by Salari et al. (2025) highlights three main pathways of this transformation: through the automation of routine tasks, the creation of new occupations, and changes in skill requirements. Examples of such skills and meta-competencies include AI literacy, critical thinking, creativity, and emotional intelligence. In their view, the key risks of AI implementation for the labor market are: 1) job displacement (through the automation of routine cognitive tasks such as text processing, data analysis, coding, customer support, etc.); 2) job consolidation; and 3) the disappearance of entire occupations (with text translators and call-center operators currently being among those at the greatest risk) (World Economic Forum, 2025).

The full-scale invasion of Ukraine by the Russian Federation has created a unique challenge for the labor market and the career support and development system, as it is simultaneously necessary to address an increasingly severe humanitarian crisis (the large-scale displacement of internally displaced persons (IDPs), the growing number of veterans, infrastructure destruction, etc.) and prepare for post-war reconstruction

while taking into account technological transformation (AI, digitalization, robotization, and the reconstruction of destroyed infrastructure and the economy). According to the State Employment Service of Ukraine (2025), 60-70% of IDPs lost their jobs because of relocation, while 55% of them are employed outside their field of specialization. According to the World Economic Forum (2025), as of 2024, 30-40% of industrial enterprises had been destroyed or were temporarily non-operational, particularly in Donbas and Southern Ukraine.

At the state level, initial steps toward the digitalization of career support processes are being taken. A draft of the National Strategy for the Development of Artificial Intelligence until 2030 has been proposed, which provides for the integration of AI into the educational process, the development of AI literacy among the population, and cooperation with businesses to recognize AI-related skills. In addition, the Ministry of Digital Transformation, through Diia.Education, has launched the courses “Artificial Intelligence for Schoolchildren” and “AI for Career Development” (Ministry of Digital Transformation of Ukraine, 2025, 2026).

Recent systematic reviews (Bankins et al., 2024; Taveira & Silva, 2026; Salari et al., 2025) have found that AI is no longer merely a tool, but is increasingly becoming a participant in the career process and influencing all of its stages: the exploration stage, the establishment stage, the maintenance stage, and the disengagement stage. In addition, AI is evolving toward personalized psychological support for career choice, including elements of psychological counseling. At the same time, ethical challenges and the lack of longitudinal data remain critical gaps identified by these three systematic reviews, highlighting the absence of longitudinal evidence on the impact of AI on actual career trajectories over a 5-10-year period.

From 2021 to 2026, there has been significant evolution in AI-based technological solutions in the career field. Initially (2021-2023), there were FAQ bots based on NLP (Natural Language Processing), characterized by the automation of simple queries, a lack of personalization, and the provision of predetermined answers or links to existing career resources. Their limitations included superficiality, an inability to address non-standard questions, and a lack of recognition of the user's emotional state (Suresh et al., 2021). The next stage of development (2024-2025) was characterized by combining LLMs (Large Language Models) for dialogue with ML (Machine Learning) for recommendations, integrated through a hybrid architecture (Bhilare et al., 2025). These solutions offered a certain degree of personalization, profile analysis, and the identification of skill gaps for a chosen career path. Their limitations included a lack of consideration of the user's emotional state, motivation, values, etc., as well as a substantial (20-30%) probability of AI hallucination (Bhilare, A., Sangole, V., Sakore, S., Raut, A., & Khan, S., 2025). In 2025-2026, RAG (Retrieval-Augmented Generation) was combined with curated knowledge bases (verified sources), vector databases, and source attribution mechanisms. As a result, hallucinations decreased compared with previous solutions, reaching 5-10%, while user trust increased. The limitations included the continued lack of consideration of emotional state, motivation, values, etc., as well as dependence on the data incorporated into the knowledge base (Shaik et al., 2025). Current products (2026+) are characterized by the use of LLMs together with psychologically grounded approaches based on SDT (Self-Determination Theory) and SFBT (Solution-Focused Brief Therapy), integrating autonomy, competence, and relatedness into interaction

design (Han et al., 2025; Ebner et al., 2026). The SDT bot emphasized user choice and strengths, demonstrated signs of empathy, and provided examples of others. The SFBT bot operated based on a solution-focused coaching framework, with an emphasis on solutions, resources, strengths, future goals, and planning the next steps. The level of personalization increased substantially, as the user's profile, emotions, and psychological state were taken into account. The limitations of these studies remain the same: the absence of longitudinal data on the impact of AI on users' careers and small sample sizes (Ebner et al., 2026).

In contrast, Taveira & Silva (2026) describe three waves in the evolution of AI in career guidance: automated information (2015-2018), personalized recommendations (2019-2022), and dialogue-based support (2023-2026).

The study by Portell-Fonolla et al. (2026) deserves particular attention, as it reviews AI applications designed to support women's career development. The authors argue that AI tools for supporting women's careers have several main areas of application: addressing bias and improving representation, skills development and expanding opportunities, career pathways, and retaining women in professions. Furthermore, gender equality depends not only on the technical effectiveness of AI, but also on the design, governance, and context of its use (Portell-Fonolla et al., 2026).

Since interaction between AI and the user, particularly its content and quality, is becoming one of the factors influencing the effectiveness of career counseling, it is important to consider the contemporary psychological foundations of this interaction, namely the relevant theories. The most widespread theory at present is Holland's RIASEC Theory (Holland, 1997). In AI-based systems, it is typically implemented as follows: first, the user's personality type is identified (Realistic, Investigative, Artistic, Social, Enterprising, Conventional), after which personalized recommendations are generated using ML- or LLM-based recommendation systems. Another important framework is Self-Determination Theory (SDT) (Deci & Ryan, 1985), which states that people have three basic psychological needs—autonomy, competence, and relatedness—the satisfaction of which contributes to intrinsic motivation, well-being, and effectiveness. In AI interaction with users, this theory is integrated through dialogue design: the system emphasizes user choice, provides feedback, expresses empathy, etc. (Han et al., 2025). Career Construction Theory (CCT) (Savickas, 2005) views a career not as a “choice of profession” but as the construction of identity through adaptation, narrative, and meaning. Solution-Focused Brief Therapy (SFBT) argues that, rather than analyzing problems, it is preferable to focus on solutions. SFBT uses various techniques and is integrated into AI-based career interactions through specific dialogue designs (for example, the bot asks about solutions, strengths, the future, etc.) (Ebner et al., 2026). Social Cognitive Career Theory (SCCT) is a comprehensive theory of career development developed by Lent, Brown, and Hackett (1994; 2002). It explains the formation of career interests, choices, and achievements through the interaction of cognitive, behavioral, and contextual factors, incorporating such components as self-efficacy, outcome expectations, goals, contextual supports, and barriers.

Regarding research on the effectiveness of AI in career counseling, there are currently relatively few scientific publications on this topic, and most of them have significant limitations, primarily due to small sample sizes (up to 50 respondents, and in the best cases up to 100). Despite this, the available empirical evidence on the

effectiveness of AI in the career field indicates such positive outcomes as improved clarity of career goals (Ebner et al., 2026), reduced career decision-making difficulties (Han et al., 2025), reduced time spent searching for vacancies, and more accurate identification of professional profiles (Spivak, Bondarchuk, & Cherevyk, 2025). Technical evaluations of the latest AI tools indicate progress in reducing hallucinations through RAG and high accuracy of ML models, but with an important caveat: the technical accuracy of AI models does not in itself equate to psychological effectiveness (Shaik et al., 2025; Bhilare et al., 2025). It is also worth noting the results of a recently published preprint from a randomized study involving 517 employed adults (Schimpf, Voigt & Bohné, 2026). The study found that an LLM chatbot designed to support career goal setting produced a small improvement in short-term progress compared with no support. However, the chatbot did not demonstrate an advantage over a conventional written structured self-reflection task. A recently conducted study in Ukraine examining perceptions of AI as a career tool (Semenikhina & Drushlyak, 2026), based on a sample of 354 students, found “cautious optimism” toward its use. At the same time, the authors highlighted several potential risks identified by respondents regarding AI in career counseling, including loss of autonomy, erroneous advice, reduced critical thinking, and various ethical concerns.

Therefore, an analysis of the findings of these studies provides grounds for cautiously stating that the potential advantage of chatbots lies not in their pure effectiveness in career counseling for adults compared with human or other “conventional” solutions, but rather in their convenience, interactivity, accessibility, and opportunities for further integration and scaling. In the Ukrainian context, the potential of AI career chatbots for adults is particularly high due to the large-scale need for professional reorientation among IDPs, veterans, students, young people, and those who have lost their jobs as a result of the war.

The most promising directions are modular or integrated solutions that can be linked to job vacancy databases, educational programs, psychological support platforms, etc. Alongside purely “AI-based” solutions, hybrid career counseling models that combine AI and human support may also be promising.

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Use of artificial intelligence.

During the preparation of the conference material, Perplexity AI was used to search for and systematize information, as well as to format references. ChatGPT GPT-5.6 Luna was used to translate the text from Ukrainian into English. Grammarly AI was used to correct grammar and punctuation.