New Ideas for University Students' Career Planning from the Perspective of AI

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Abstract: With the advancement of AI technology, the demand for talents across various industries has undergone significant changes, which not only generates a large demand for AI technology talents, but also imposes higher requirements on the skills of related personnel. In this context, some university students' attitudes towards employment and entrepreneurship have gradually shifted, and they have begun to engage in work related to AI. However, overall, most university students still face shortcomings, such as insufficient understanding of AI-related technologies and relatively low levels of AI-related vocational skills. It is therefore urgent to promptly transform outdated professional values, take the field of AI technology as an important career orientation, learn to utilize AI tools to assist in career planning, and make efforts to enhance AI-related vocational skills. Only in this way can university students better adapt to the evolving trends of talent demand in the society of the new era.

Keywords: AI; university student; career planning

1. Introduction

With the continuous development and maturity of core AI technologies such as machine learning, deep learning, computer vision, and natural language processing, intelligent robots have gradually demonstrated strong application capabilities in various fields such as manufacturing, services, finance, healthcare, and education. They are now capable of handling tasks such as data analysis, image processing, decision-making support, and process optimization. The phenomenon of "human–machine collaboration" has emerged in various industries. In this new work mode, positions with low technical barriers, high repetition, and standardization, such as assembly line workers, basic customer service personnel, data entry clerks, bank tellers, and others, are gradually being replaced by intelligent robots [1]. It is predicted that 50% of professions will gradually be replaced by AI between 2030 and 2060 [2]. This not only improves work efficiency and reduces operating costs, but also has a profound impact on the traditional employment structure, raising concerns about a future "unemployment wave".

At the same time, new professions such as natural language processing engineers, AI trainers, speech and visual recognition engineers, robot product managers, robot ethics assessors, and AI ethics and compliance experts are gradually emerging. This not only makes the demand for talent in the market more diversified, providing greater choices for university students' employment and entrepreneurship, but also sets higher vocational skill requirements for future talents. In addition to traditional professional knowledge and skills, interdisciplinary integration ability, innovative thinking, data analysis ability, digital literacy, human–machine collaboration, and continuous learning have gradually become the core elements of workplace competitiveness in the new era.

Due to the time gap between talent cultivation and social demand, it is easy for graduates to experience a disconnect between their knowledge and skills and the actual needs

of enterprises, resulting in a mismatch between supply and demand [3]. If university students can understand the characteristics of societal talent demand in advance and actively follow technological development trends, they can make career plans in advance and take corresponding measures. By participating in interdisciplinary learning, project practice, internships and training, skill certification, and other methods, they can enhance their overall competencies, improve their adaptability to rapidly changing workplace environments, and strengthen their competitiveness in the job search and employment process, thereby occupying a more advantageous position in future employment.

This article will be based on the perspective of AI, analyzing the new characteristics of talent demand in industries and enterprises, as well as the current employment and entrepreneurship situation of university students. It will explore how university students can better formulate career development plans in the context of the AI era, and propose forward-looking and actionable suggestions to provide targeted recommendations for university students to better formulate career plans and achieve high-quality employment.

2. New Characteristics of Talent Demand for Industry Enterprises from the Perspective of AI

Currently, from the perspective of AI, the talent demand of industry enterprises mainly presents the following characteristics.

2.1. High Demand

According to statistics released by iMedia Consulting, in terms of the proportion of AI-related talent recruitment to total recruitment in Chinese surveyed companies in 2024, 29.39% of companies accounted for 10%–20%, 40.41% accounted for 20%–30%, and 12.45% accounted for 30%–40%. The projects involved mainly include multimedia, information recommendation, transportation, healthcare, home furnishings, and others. These data indicate that the demand for AI-related positions in these fields is rapidly increasing. Among them, the top five positions with high demand are AI data engineers (mainly responsible for processing and analyzing large amounts of data), accounting for 29.59%; AI robot engineers (focusing on developing and optimizing robot systems that can perform specific tasks), accounting for 27.35%; AI algorithm engineers (dedicated to researching and designing new algorithms to solve complex problems), accounting for 27.14%; computer vision engineers (mainly responsible for enabling computers to understand information in images or videos), accounting for 23.27%; and deep learning engineers (mainly using deep learning technology to simulate the human brain for tasks such as pattern recognition and data analysis), accounting for 19.18%. In addition, McKinsey (a global management consulting firm) predicts that by 2030, China's AI talent gap will reach 4 million. This not only reflects the strong demand for such high-skilled talents in the industry, but also reveals a serious fact: as the birth rate gradually declines, the number of university students will decrease in the future, and the shortage of AI talents will become even more severe (McKinsey & Company, *How Businesses Can Close China's AI Talent Gap*, May 2023). This urgently requires cultivating AI talents who meet the demand through various means, in order to alleviate the shortage of related talents [4].

2.2. High Skill Requirements

AI, as the core driving force of the new round of technological revolution and industrial transformation, has set unprecedentedly high standards for the comprehensive quality and professional ability of practitioners. Talents engaged in AI-related professions not only need to possess solid professional knowledge, but also a deep understanding and application ability in AI algorithm design, model construction and optimization, data processing and analysis, and so on. They can not only deeply understand the basic characteristics and common requirements of a certain industry, but also apply intelligent technology to solve various practical problems that arise in the development of the industry,

transforming from simple command executors to multifunctional monitors, analysts, and innovators. It is necessary to be familiar with the operating mechanism and business logic of a given industry, as well as to possess the ability to collaborate across domains and integrate systems. AI professionals typically combine multiple functions such as technical experts, industry consultants, and project managers, with highly specialized, cross-disci-plinary, and practice-oriented skill requirements. The "Job Competency Requirements for AI Industry Talents" released by the Talent Exchange Center of the Ministry of Industry and Information Technology divides AI talents into nine directions based on the AI tech-nology system and the demand for talents, including the Internet of Things, intelligent chips, machine learning, deep learning, intelligent speech, natural language processing, computer vision, knowledge graph, and service robots. Each direction puts forward clear requirements in terms of professional knowledge, technical skills, engineering practice, and comprehensive abilities. Taking speech synthesis algorithm engineers as an example, they not only require professional knowledge and engineering practice related to speech, but also skills such as selecting appropriate tools according to the scenario, proficiently using tools to synthesize speech or convert speech into text, evaluating speech recognition and synthesis results, and so on. They also need comprehensive abilities such as in-depth analysis of the needs of various aspects of speech synthesis applications, research on speech synthesis algorithms, and construction of speech synthesis models.

2.3. High Salary Level

AI talents can be mainly divided into three categories: basic research talents, technol-ogy R&D talents, and application practice talents. At present, China's AI talents are mainly applied talents to meet the needs of industrial development [5]. There are few top talents, a lack of complex talents, unbalanced talent supply, few experts in leading positions, and the supply of complex talents is obviously insufficient. The distribution of talents across different regions and industries is also uneven. Therefore, the salaries that industry enter-prises are willing to provide are generally high. Taking natural language processing and deep learning positions as examples, in the first half of 2024, the average monthly salary for the two positions was 24,007 yuan and 26,279 yuan, respectively, ranking among the top AI-related positions (National School of Development, Peking University, Zhaopin, *Research Report on the Potential Impact of AI Large Models on Our Country's Labor Market*, September 2024). This demonstrates the high recognition and urgent demand of the mar-ket for such high-skilled talents. According to the "2024 Chinese Undergraduate Employ-ment Report" released by the Michelson Research Institute, majors closely related to AI, such as data science and big data technology, and intelligent science and technology, have an average monthly income of 7,014 yuan and 6,966 yuan, respectively, which is signifi-cantly higher than the average monthly income of 6,050 yuan for 2023 undergraduate stu-dents. It can be foreseen that with the continuous development of the AI industry, gradu-ates in related majors will obtain more favorable salary and benefits in the job market [6].

3. The Current Status of Career Planning for University Students

Through research, we found that current university students generally exhibit the following characteristics in terms of career planning.

3.1. Professional Values Are Still Relatively Traditional

Currently, the career values of most university students are still relatively conserva-tive. Most university students tend to choose positions with stable jobs, complete salary and welfare guarantees, and high social status. Against the backdrop of increasing em-ployment pressure, "postgraduate entrance examination" and "civil service examination" are still popular choices for fresh graduates. Some university students from privileged families even focus on applying for high-quality civil service positions in order to achieve a more stable life [7]. For example, a scholar from Shandong Province conducted a survey

on the employment intentions of graduates from non "non-top-tier universities" universities in the province. The final data showed that the proportion of university graduates choosing to take the postgraduate entrance examination, become civil servants, or work in state-owned enterprises or public institutions was 61.79%, 19.03%, and 8.6%, respectively. These figures reflect the high attention and strong dependence of local university students on positions within the system. Some students may follow common paths such as postgraduate studies or civil service examinations without fully evaluating whether their interests, abilities, and development directions are truly matched, thereby overlooking careers that better utilize their strengths and foster growth [8].

3.2. Insufficient Emphasis on AI in Career Planning

Although many university students generally have a certain understanding of AI and can try to use AI tools to search for information, assist in organizing outlines, prepare communication content, control household appliances, and handle other daily life and study-related affairs, they often lack systematic thinking regarding the development trends of AI and its profound impact on the job market when planning their careers. Therefore, the importance of AI is not sufficiently recognized. The vast majority of students do not have clear career plans in the face of the impact of AI [9]. They also lack corresponding goals and plans for how to improve their skills through participating in competitions or project practices. Furthermore, they have an insufficient understanding of AI-related industry positions and generally do not have a clear perception of the most in-demand areas for AI-related talents. As a result, they exhibit a certain degree of confusion and passivity, and most have not developed corresponding skill enhancement plans.

4. New Ideas for University Students' Career Planning from the Perspective of AI

We believe that from the perspective of AI, university students can make good career plans from the following aspects.

4.1. Taking the Field of AI Technology as an Important Career Direction

At present, whether it is the "postgraduate entrance examination", "civil service examination" or applying for public institutions, the competition is extremely fierce. Taking the 2025 national civil service examination as an example, the plan was to recruit 39,700 people. In the end, more than 2.8 million people nationwide passed the preliminary screening, excluding positions for which no one registered or the registration did not meet recruitment requirements. The national average competition ratio is about 80.1:1. Taking the 2023 National Postgraduate Entrance Examination as another example, the number of applicants was 4.738 million, the number of admissions was 1.244 million, and the admission rate was 26.26%. The paths of "postgraduate entrance examination" and "civil service examination" have thus become extremely crowded and challenging. Meanwhile, the total number of traditional skilled talents in enterprises is increasingly saturated. Against the backdrop of the growing demand for AI talents and the generally high salaries for related positions, the field of AI technology provides university students with broader career choices and development opportunities. University students can promptly adjust their career values and fully recognize that, in the field of AI technology, they can not only obtain more favorable material rewards but also actively participate in cutting-edge technological innovations that have the potential to change the world. Based on the current development status and future trends of the AI industry, taking the field of AI technology as an important career direction involves strengthening targeted learning of AI-related knowledge such as machine learning, deep learning, computer vision, and natural language processing, staying informed of cutting-edge AI developments, actively participating in AI-related competitions, project training, or internships, continuously accumulating valuable practical experience, enhancing the ability to solve complex problems, and laying a solid foundation for future job searches.

4.2. Learn to Use AI Tools to Assist in Career Planning

The rapid development of AI technology has brought new challenges to university students' career planning while also providing more career opportunities. University students can fully leverage intelligent tools to make their career planning more scientific, precise, and efficient. The main measures can be summarized as follows.

1)   Using intelligent tools to collect workplace information

Workplace information is an important resource for university students to understand the external environment. With the assistance of AI-driven intelligent recruitment platforms, university students can obtain various useful information such as industry trends, company profiles, and career requirements. For example, they can learn about development prospects, popular positions, future trends, and talent gaps in different industries; the mission, vision, values, work environment, work atmosphere, work intensity, and promotion mechanisms of different organizations; as well as job responsibilities, skill requirements, promotion pathways, salary, and benefits for different positions.

2)   Relying on intelligent tools to clarify career positioning

University students can not only rely on AI algorithm-based career assessment systems to gain a deeper understanding of their personality, career interests, and career values, but also use AI large models to explore the growth experiences of successful individuals across various industries, especially their advanced practices in career planning. Based on this, they can use intelligent assessment platforms to assist themselves in making more scientific and reasonable career positioning, determining goals that better fit their own circumstances, and developing more operational and personalized action plans. Through these measures, university students can more accurately identify their strengths and weaknesses, clarify the career directions that suit them, make career choices that align with their personal characteristics, and avoid blindly following the crowd or entering career paths that are not suitable for them.

3)   Using intelligent tools to develop growth plans

University students can use intelligent tools to automatically extract career growth stories from news reports, interviews, social media sharing, and other content, mining the growth trajectories of successful individuals in various industries from massive datasets, especially their advanced practices and successful experiences in career planning. This process can form a highly readable and logically clear database of successful career development cases. In this way, students can find effective paths for reference, and even identify "benchmarks" to develop more targeted goals and growth plans for themselves.

4.3. Focus on Improving AI + Professional Vocational Skills

The current talent market increasingly demands composite talents who possess both AI and interdisciplinary knowledge and abilities. Students in any major should strive to improve their relevant vocational skills. The specific manifestations are as follows.

4.3.1. Vocational Skills That Students Majoring in AI Need to Enhance

Students majoring in AI-related fields, such as Artificial Intelligence, Intelligent Science and Technology, Robotics Engineering, Data Science and Big Data Technology, Pattern Recognition and Intelligent Systems, Automation, etc., can follow the professional talent training plans formulated by their schools and, under the guidance of their instructors, study programming languages, machine learning, deep learning, data processing and analysis, natural language processing, computer vision, and other related knowledge to establish a solid knowledge system based on deep understanding. They can also keep up with the latest development trends in AI technology, proficiently master the operation of large models such as DeepSeek and ChatGPT, as well as common AI tools. On this basis, students can focus on improving relevant skills such as text generation, image recognition, speech synthesis, video creation, project design, deployment, and more through partici-

pation in data collection, model deployment, and intelligent agent training, effectively applying what they have learned. Furthermore, students can select several professional fields based on their interests—such as medical AI, financial AI, legal AI, and other popular directions—for in-depth research, aiming to find a more precise position in their future career development, stand out as an important force in promoting the development of related industries, and maximize their personal value.

4.3.2. Vocational Skills That Non AI Related Majors Need to Enhance

In the era of AI, although not all professional students need to become experts in AI technology, it is still necessary to have a proper understanding of relevant knowledge and master corresponding skills. Non-AI-related majors need to not only learn their professional knowledge well, but also deeply consider what general AI tools are available in practice, what AI tools are usually used in industry enterprises, and how these tools can be better integrated into professional knowledge learning and skill training, actively exploring scientific methods that can help solve practical problems. University students can first have a deep understanding of general AI tools, including but not limited to data analysis tools that can help process and analyze large volumes of data, machine learning platforms that can provide powerful frameworks and train models, natural language processing tools that can assist in handling textual information, and visual tools that can assist in image or video analysis. Secondly, students can gain a deeper understanding of the integration points between their major and AI and master the corresponding skills. The following are common suggestions for improving the skills of professional students:

1) Suggestions for Enhancing AI Skills of Law Majors

For students majoring in law, on the basis of mastering knowledge of laws and regulations related to the application of AI technology, they can not only learn to use AI models (such as DEEPSEEK, CHATGPT, etc.) to search for relevant laws and regulations, but also gain more legal knowledge under the guidance of AI agents in related courses and track the latest judicial cases in real time; moreover, by interacting with intelligent tools, they can simulate real courtroom debate scenarios to improve their logical thinking and oral expression skills; they can also try using AI contract generators to automatically create contracts that meet legal requirements based on basic information provided by the user, reducing errors that may occur when drafting contracts manually and ensuring the legality and validity of contract terms; furthermore, they can simulate using AI tools to assist in compliance checks, legal risk analysis, and prevention reports, providing professional references for internal decision-making in relevant organizations and ensuring smooth operation within a legal framework.

2) Suggestions for Enhancing AI Skills of Business Administration Majors

For students majoring in business administration, they can try using an AI-driven questionnaire design platform to automatically generate targeted question lists based on predetermined target groups, and use intelligent algorithms to quickly process and deeply analyze the collected data, thereby obtaining valuable survey reports; they can also learn how to apply big data analysis and machine learning techniques to extract key features from massive consumer behavior data, accurately depicting the profile of target users, including basic information, interest preferences, consumption habits, typical labels, and other multidimensional information, to help enterprises better grasp and meet customer needs; they can also simulate proposing innovative functional designs based on user profiling and market demand forecasting, generating preliminary product concept maps or prototypes; they can even try designing intelligent customer service systems that can automatically answer common questions, supply chain management systems that can assist with inventory control, and so on; students with sufficient resources can also assist in creating business plans, PPTs, posters, or audio and video materials that can be used for competitions or financing.

3) Suggestions for Improving AI Skills of Accounting and Finance Majors

Currently, AI technology has been widely applied in finance and accounting, and traditional accounting and finance positions are generally transitioning toward intelligence. Accounting and finance majors can first focus on practical skills such as automatically importing bank statements, intelligently identifying transaction types, and automatically generating accounting vouchers using AI tools; they can also learn effective methods to extract data from financial systems or software and automatically generate financial statements such as balance sheets, income statements, and cash flow statements; moreover, they can automatically identify key published information, classify and archive it, and compare it with internal system data to quickly detect abnormal invoices; in addition, they can analyze historical financial data to predict future financial indicators such as revenue, costs, and profits, and evaluate the liquidity risk of enterprises, and so on.

4) Suggestions for Improving AI Skills of Medical Students

With the rapid development of the new generation of information technology, the concept of smart healthcare has been widely recognized and deeply developed, becoming an important direction for promoting the upgrading of modern medical services and optimizing the allocation of medical resources. During their school years, medical students can try using AI tools to assist in the recognition and interpretation of medical images such as X-rays, CT scans, and MRI, as well as in collecting, processing, and displaying medical data. Moreover, they can rely on AI-assisted diagnostic systems to carry out tasks such as lung nodule detection and tumor diagnosis. At the same time, through training, students can simulate anatomy, case analysis, and other procedures without the participation of real patients, and to develop proficiency in the operation of AI devices such as surgical robots and rehabilitation robots. This approach is not only conducive to gaining a more intuitive grasp of clinical knowledge and operational skills, but also helps to continuously enhance scientific research abilities and clinical auxiliary diagnostic capabilities.

5) Suggestions for Improving AI Skills of Agricultural Majors

The organic integration of various AI tools with agricultural operations is not only an urgent need for the development of modern agriculture but also a key path to promote the continuous advancement of AI technology in agricultural related fields. At present, AI technology has been widely applied in many aspects such as automatic sowing, precise irrigation and fertilization, identification of pests and diseases, assessment of growth status, intelligent environmental monitoring, precise feeding, disease warning, and disaster prediction, showing great potential. How agricultural majors can, through intensive training, integrate various AI tools with agricultural operations in an organic manner is an important topic worthy of in-depth study. Using AI tools to carry out automatic sowing, precise irrigation and fertilization, pest and disease identification, growth status assessment, intelligent environmental monitoring, precise feeding, disease early warning, disaster prediction, and other related agricultural tasks are all key vocational skills that must be mastered. Only in this way can they have a greater chance of becoming versatile agricultural talents who meet the requirements of the new era and make greater contributions to promoting the transformation of agriculture toward intelligence in China and even globally.

5. Conclusion

The country attaches great importance to relying on "AI + action" to promote the development of six emerging industries, including future manufacturing, future information, future materials, future energy, future space, and future health. As university students in the new era, only by actively integrating into the trend of the times, making career plans in advance, and striving to master AI-related vocational skills can we stand undefeated in the competition of the future. Of course, AI technology is also continuously developing and changing, and its application scenarios will constantly be updated and emerge. In the process of learning, we also need to keep up with the times, always pay

attention to the impact of AI technology development on our own career planning, and learn to master it and control it, so as to avoid being replaced by AI or abandoned by the times as much as possible. As long as contemporary university students can actively strive to master AI-related skills, and learn to transform them into their own core competitiveness, continue to learn and innovate, they will certainly be able to create a better and better future for themselves.

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