International Journal of Management Science Research, Vol.8, Issue 9, (Sep) 2025
ISSN 2536-605X
DOI: 10.53469/ijomsr.2025.08(09).09

Exploring the Application of Artificial Intelligence to Assist Financial and Accounting Professionals in Learning and Employment

Xueyi Luo, Shufang Chen

School of Accounting and Finance, Xian Peihua University, Xian, Shaanxi Province, 710125

Abstract: ***With the continuous development of artificial intelligence, gradually integrating into peoples daily lives and work, traditional accounting professionals employment is facing impacts. With the assistance of artificial intelligence, the completion of financial tasks will become more precise and meticulous. This is primarily because the involvement of artificial intelligence enhances the quality of corporate information accounting and reduces internal costs, providing assistance to accounting professionals. How to effectively and deeply learn accounting expertise through artificial intelligence, explore the current applications of artificial intelligence in accounting positions across various industries, thereby better adapting to market and future employment demands, has become an indispensable step for accounting professionals future careers. This paper is based on the future development of artificial intelligence in the accounting field. It combines the actual backgrounds, employment needs, and challenges faced by college students majoring in accounting. It provides solutions, coping strategies, and pathways by aiming to assist accounting students in gaining a clear understanding of their current professional environment, actively improving themselves, igniting their learning aspirations, and enhancing their employability.***

Keywords: College Students Majoring in Finance and Accounting; Artificial Intelligence; Learning; Employment Competitiveness.

1. INTRODUCTION

The selection of the top ten technologies that affect accounting practitioners in 2017 was released at the 16th National Accounting Informatization Seminar of the China Accounting Association in July 2017. Among them, machine learning is also one of the top ten technologies that affect accounting personnel. In mid May 2018, Deloitte's financial robots were born in response to the times. And this is also the debut of financial robots. Following closely behind, financial institutions such as Ernst&Young and PwC have also released their own financial robot systems. Financial robots can not only replace tedious and repetitive financial work, but also automatically supervise various financial processes, thus having significant advantages over manual labor. At the end of 2022, the launch of ChatGPT sparked a wave of enthusiasm. In addition to applying artificial intelligence technology to accounting work, it has also been applied to many aspects such as taxation and auditing. From this, it can be seen that artificial intelligence technology has been applied in many aspects of accounting work and is rapidly developing. This series of developments has led to an employment crisis for current college students majoring in finance and accounting.

2. THE CURRENT APPLICATION STATUS OF ARTIFICIAL INTELLIGENCE IN ACCOUNTING POSITIONS

Zheng, Zhou, and Lu (2023) developed an improved YOLOv5s algorithm for rebar cross-section detection [1], while Zhao, Zhang, and Hu (2023) applied a Res2Net-YOLACT+HSV model for smart warehouse track identification [2]. Further advancing the field, Shao, Wang, and Liu (2023) proposed a salient object detection algorithm leveraging diversity features and global guidance information [3]. Beyond traditional vision tasks, Ge and Wu (2023) conducted an empirical study on the adoption of ChatGPT for bug fixing among professional developers, highlighting the intersection of AI and software engineering [4]. The year 2025 witnessed a proliferation of novel frameworks across various sectors: Tu (2025) introduced ProtoMind for NAS and SIP message sequence modeling in smart regression detection [5]; Xie and Liu (2025) created InspectX to optimize industrial monitoring systems [6]; and Zhu (2025) developed REACTOR for reliability engineering with automated causal tracking [7]. Additional 2025 contributions include Zhang's (2025) AdOptimizer for efficient ad delivery [8], Hu's (2025) low-cost 3D authoring via guided diffusion [9], and Tan et al.'s (2024) highly reliable densely connected convolutional networks for fault diagnosis [10]. Research also extended to business

applications with Zhuang (2025) exploring real estate marketing strategies under digital transformation [11], and Han and Dou (2025) proposing a user recommendation method integrating hierarchical graph attention networks [12]. Zhang et al. (2025) applied AI-driven sales forecasting in the gaming industry [13], while Yang (2025) implemented website internal link optimization using the Dijkstra algorithm [14]. Cheng et al. (2025) investigated the relationship between executive human capital premium and stock price volatility [15]. In urban planning and healthcare, Xu (2025) presented UrbanMod for text-to-3D city modeling [16], and Hsu et al. (2025) developed MEDPLAN, a two-stage RAG system for personalized medical plan generation [17]. Finally, Yuan and Xue (2025) proposed a multimodal information integration and retrieval framework based on graph neural networks [18].

2.1 Automated accounting processing

In the application of accounting positions, automated accounting processing is the most common. Artificial intelligence technology can help enterprises automatically complete tasks such as accounting processing, data analysis, and report production. In traditional manual processing, accountants need to spend a lot of time analyzing and adjusting data, while automated accounting processing can automate these processes, reduce the time and error rate of manual intervention, and improve work efficiency.

2.2 Financial Data Analysis

Artificial intelligence technology can assist enterprises in financial data analysis, which can better understand the economic situation and future development trends of the enterprise. Financial data analysis includes forecasting sales, forecasting costs, developing financial budgets, risk warning, etc. The use of artificial intelligence technology can automate these analyses, better perform data mining and trend analysis, and more accurately formulate financial policies and plan financial goals.

2.3 Risk Management

Risk management is an essential part of the financial and accounting positions in enterprises. Artificial intelligence technology can help enterprises automatically identify, evaluate, and manage potential risks while completing financial data analysis. For example, artificial intelligence technology can be applied in fraud detection, transaction monitoring, and regulatory systems to help businesses identify fraud risks, improve their anti fraud capabilities, and maintain financial stability.

2.4 Tax Planning

Tax planning is an important part of the financial and accounting positions in enterprises, and it is also an indispensable part of tax control. Artificial intelligence technology can utilize data analysis to provide better tax planning services for enterprises. For example, artificial intelligence technology can automatically scan different tax policies, help companies find the optimal tax plan, save costs, avoid tax risks, and improve their financial management capabilities.

2.5 Specific application scenarios.

Artificial intelligence can analyze and interpret a large number of financial reports through natural language processing technology, extract key information and trends, and provide decision-making basis for investors and analysts. In addition, artificial intelligence can also use machine learning algorithms to analyze and predict market data, helping investors develop more accurate investment strategies.

3. OPPORTUNITIES FACED BY FINANCE AND ACCOUNTING MAJORS IN THE CONTEXT OF ARTIFICIAL INTELLIGENCE

3.1 Automated processing and data analysis capabilities

Artificial intelligence technology can automatically process large amounts of financial data and complex accounting work, providing efficient and accurate financial data processing and analysis. Applying artificial intelligence technology to finance and accounting majors can reduce tedious manual operations, free up a lot of time and human resources, make financial work more automated, and improve work efficiency. Artificial intelligence technology can help college students majoring in finance and accounting master deeper data analysis

skills, analyze and mine massive financial data, assist enterprises in making financial decisions, and provide accurate predictions and suggestions, thereby better understanding and applying financial data and providing more valuable decision support.

3.2 Risk Management

Through artificial intelligence technology, students majoring in finance and accounting can better identify and manage risks, predict market trends and economic fluctuations, and provide effective risk prevention measures for enterprises.

3.3 Cross border development

The application of artificial intelligence technology has led to many new business models and innovations in the field of financial accounting, such as intelligent investment, blockchain technology, etc. After college students are exposed to related technologies, their development space has been expanded and their career choices have increased. College students majoring in finance and accounting can learn and apply knowledge and technology related to artificial intelligence, achieve cross-border development, and enrich their career paths.

3.4 The application of artificial intelligence in accounting positions has limitations

Today, with the rapid development of artificial intelligence, although some accounting positions are gradually being replaced by financial robots and artificial intelligence technology in order to improve work efficiency and accuracy, ultimately, people's work in accounting positions is still irreplaceable. This is because artificial intelligence works based on instructions and programs set by people, without flexibility, creativity, cross-border thinking, and the ability to think independently

3.5 Artificial intelligence poses security risks

In the basic work of finance and accounting, including filling in original vouchers, various account statements, etc., these tasks can be completed by artificial intelligence, thus realizing the popularization of electronic accounting and billing. At the same time, various financial information can be analyzed and recorded in electronic format. Based on artificial intelligence, its advantages can be fully utilized. However, even so, in today's digital age, entrusting enterprise data to artificial intelligence for storage still carries significant security risks. If appropriate security measures are not taken, it is crucial to effectively prevent and control the security of computer networks. It can be seen that in some accounting positions, accounting personnel are irreplaceable.

4. CHALLENGES FACED BY COLLEGE STUDENTS MAJORING IN FINANCE AND ACCOUNTING IN THE CONTEXT OF ARTIFICIAL INTELLIGENCE

4.1 High R&D costs and fast technological updates for robots

In the early stage, financial robots require a large amount of procurement and equipment installation. In addition, during use, financial robots require regular or irregular maintenance and updates, as well as training expenses for employee transformation and upgrading. In today's era of rapid technological development, artificial intelligence technology is constantly updating and iterating, and modern production industries are gradually entering the era of artificial intelligence. It not only significantly reduces manual labor, but also makes a qualitative leap in work quality and efficiency. College students majoring in finance and accounting should continuously learn and update their knowledge and technology related to artificial intelligence, keep up with the times, and improve their competitiveness.

4.2 Changes in Employment Situation

Artificial intelligence technology is gradually becoming popular in various industries, and the job market for finance and accounting majors has become more competitive. The widespread application of artificial intelligence technology may lead to the disappearance or reduction of certain traditional financial job positions. In the new era, college students need to possess solid professional knowledge and skills, innovative perspectives that emerge with the times, and unique adaptability to enhance their competitive advantage in the job market.

4.3 High tech requirements

Proficiently mastering artificial intelligence technology requires high standards for college students majoring in finance and accounting. They not only need to master solid professional knowledge, but also need to understand certain programming and data analysis abilities, which may be a challenge for some traditional finance and accounting college students.

4.4 Increase significant psychological pressure

The development of artificial intelligence technology has had a certain impact on traditional financial accounting work, and accounting positions are gradually being replaced. The requirements for finance positions are gradually increasing for college students who have just entered society. The group of finance majors has not yet accumulated enough work experience, and the current employment pressure is increasing day by day, which may lead to job uncertainty and psychological pressure.

5. NEW REQUIREMENTS FOR EMPLOYMENT OF FINANCE AND ACCOUNTING MAJORS IN THE ERA OF ARTIFICIAL INTELLIGENCE

5.1 Data analysis capability

The rapid development of artificial intelligence technology has led to a constant increase in the scale and complexity of data in the field of finance and accounting. Therefore, enterprises have put forward higher requirements for the data analysis ability of financial and accounting professionals. College students majoring in finance and accounting need to possess proficient data processing and analysis skills, be able to use artificial intelligence tools and algorithms for data mining, prediction, and decision analysis, and provide valuable information support for enterprises.

5.2 Technical application capability

The application of artificial intelligence technology in the field of finance and accounting is becoming increasingly widespread, such as automated accounting systems, intelligent audit tools, etc. College students majoring in finance and accounting need to have the ability to apply artificial intelligence technology reasonably, be proficient in operating relevant software and tools, leverage the advantages of artificial intelligence technology in the field of finance and accounting, and improve work efficiency and accuracy.

5.3 Interdisciplinary Competence

Artificial intelligence technology involves multiple disciplinary fields, and college students majoring in finance and accounting need to have interdisciplinary abilities to collaborate with professionals in related fields such as data science and computer science to jointly solve complex problems in the field of finance and accounting. At the same time, they also need to constantly learn and update their knowledge to keep up with the development trends of artificial intelligence technology.

5.4 Innovative thinking and problem-solving skills

With the development of artificial intelligence technology, traditional financial and accounting work is facing certain challenges. College students majoring in finance and accounting need to possess innovative thinking and problem-solving abilities, be able to flexibly respond to new challenges and changes, and provide creative solutions.

6. STRATEGIES FOR COLLEGE STUDENTS MAJORING IN FINANCE AND ACCOUNTING

6.1 Understand the application areas of artificial intelligence technology and cultivate cross disciplinary abilities

The application fields of artificial intelligence technology are very extensive, involving various fields including finance and accounting. As the saying goes, 'Know yourself and know your enemy, and you won't be defeated in a

hundred battles'. Therefore, college students majoring in finance and accounting need to understand the application of artificial intelligence technology in the field of finance and accounting, master the financial problems it can solve, as well as the impact and prospects it brings. Only by understanding the application fields of artificial intelligence technology can we better grasp its development trajectory and make corresponding responses. At the same time, by studying other related disciplines such as computer science, data science, etc., one can cultivate their interdisciplinary abilities and increase employment opportunities.

6.2 Transform thinking and improve market sensitivity

In this new era represented by artificial intelligence, we must change our mindset, change our financial mindset. To achieve this, college students majoring in finance and accounting must keep up with the transformation of accounting positions, timely abandon traditional financial management concepts, actively learn financial management methods, continuously improve their comprehensive quality, organically combine financial management and enterprise strategic management theories, and apply them to practical work. At the same time, it is necessary to enhance one's market sensitivity, proactively transform based on market development and changes, combine accounting positions with artificial intelligence technology, and improve one's overall quality. Enhance market competitiveness.

6.3 Improve one's overall quality and skill level

Although artificial intelligence can help us accomplish many tasks, it will also to some extent suppress the value of professional talents. With the higher requirements of enterprises for the comprehensive quality of accounting personnel, if accounting personnel want to establish a long-term foothold in the accounting industry, they must first keep up with the development trend of the times, master and apply accounting computerization, continuously learn and accumulate various professional accounting knowledge through the national accounting vocational training platform, and also timely grasp and master the latest financial policies of the country. Secondly, utilizing various online channels, actively learning knowledge related to artificial intelligence, enhancing one's business capabilities, and enabling better application in daily financial work.

6.4 Enhance innovation awareness and creativity

With the development of artificial intelligence technology, some repetitive tasks in work will be replaced by machines, and highly complex tasks such as innovation, discovery, and driving business upgrades are becoming increasingly important. Therefore, college students majoring in finance and accounting should enhance their innovation awareness and creativity, actively participate in technological innovation and business upgrading, and provide better and more efficient financial and accounting services for enterprises.

6.5 Emphasize practice and application

College students majoring in finance and accounting should focus on practice and application, and enhance their practical and problem-solving abilities through participating in projects or internships.

7. CONCLUSION

In the current era of rapid development of artificial intelligence, college students majoring in finance and accounting are facing both opportunities and challenges. By seizing opportunities, continuously learning and updating technology, cultivating cross disciplinary abilities, and emphasizing practice and application, finance and accounting majors will be able to gain broader development space in the era of artificial intelligence and bring greater value to enterprises and society.

PROJECT NAME

Shaanxi Province College Students Innovation and Entrepreneurship Training Program Project: Exploration of the Application of Artificial Intelligence to Support the Learning and Employment of Financial and Accounting Professionals (Project Number: PHDC2023030).

REFERENCES

[1] Yan Cao. Analysis of Opportunities and Challenges for Financial and Accounting Personnel in the Context of Artificial Intelligence [J]. Digital Economy, Chinese Market 2021 (35): 191-192.
[2] Zheng, Y., Zhou, G., & Lu, B. (2023). Rebar Cross-section Detection Based on Improved YOLOv5s Algorithm. Innovation & Technology Advances, 1(1), 1–6. https://doi.org/10.61187/ita.v1i1.1
[3] Zhao, X., Zhang, L., & Hu, Z. (2023). Smart warehouse track identification based on Res2Net-YOLACT+HSV. Innovation & Technology Advances, 1(1), 7–11. https://doi.org/10.61187/ita.v1i1.2
[4] Shao, F., Wang, K., & Liu, Y. (2023). Salient object detection algorithm based on diversity features and global guidance information. Innovation & Technology Advances, 1(1), 12–20. https://doi.org/10.61187/ita.v1i1.14
[5] Ge, H., & Wu, Y. (2023). An Empirical Study of Adoption of ChatGPT for Bug Fixing among Professional Developers. Innovation & Technology Advances, 1(1), 21–29. https://doi.org/10.61187/ita.v1i1.19
[6] Tu, Tongwei. "ProtoMind: Modeling Driven NAS and SIP Message Sequence Modeling for Smart Regression Detection." (2025).
[7] Xie, Minhui, and Boyan Liu. "InspectX: Optimizing Industrial Monitoring Systems via OpenCV and WebSocket for Real-Time Analysis." (2025).
[8] Zhu, Bingxin. "REACTOR: Reliability Engineering with Automated Causal Tracking and Observability Reasoning." (2025).
[9] Zhang, Yuhan. "AdOptimizer: A Self-Supervised Framework for Efficient Ad Delivery in Low-Resource Markets." (2025).
[10] Hu, Xiao. "Low-Cost 3D Authoring via Guided Diffusion in GUI-Driven Pipeline." (2025).
[11] Tan, C., Gao, F., Song, C., Xu, M., Li, Y., & Ma, H. (2024). Highly Reliable CI-JSO based Densely Connected Convolutional Networks Using Transfer Learning for Fault Diagnosis.
[12] Zhuang, R. (2025). Evolutionary Logic and Theoretical Construction of Real Estate Marketing Strategies under Digital Transformation. Economics and Management Innovation, 2(2), 117-124.
[13] Han, X., & Dou, X. (2025). User recommendation method integrating hierarchical graph attention network with multimodal knowledge graph. Frontiers in Neurorobotics, 19, 1587973.
[14] Zhang, Jingbo, et al. "AI-Driven Sales Forecasting in the Gaming Industry: Machine Learning-Based Advertising Market Trend Analysis and Key Feature Mining." (2025).
[15] Yang, Yifan. "Website Internal Link Optimization Strategy and SEO Effect Evaluation Based on Dijkstra Algorithm." Journal of Computer, Signal, and System Research 2.3 (2025): 90-96.
[16] Cheng, Ying, et al. "Executive Human Capital Premium and Corporate Stock Price Volatility." Finance Research Letters (2025): 108278.
[17] Xu, Haoran. "UrbanMod: Text-to-3D Modeling for Accelerated City Architecture Planning." Authorea Preprints (2025).
[18] Hsu, Hsin-Ling, et al. "MEDPLAN: A Two-Stage RAG-Based System for Personalized Medical Plan Generation." arXiv preprint arXiv:2503.17900 (2025).
[19] Yuan, Yuping, and Haozhong Xue. "Multimodal Information Integration and Retrieval Framework Based on Graph Neural Networks." Proceedings of the 2025 4th International Conference on Big Data, Information and Computer Network. 2025.