GAS PUBLISHERS
Journal of Arts Humanities and Social Sciences
(GASJAHSS)
OPEN ACCESS
Volume- 02 | Issue- 10 | 2024 Homepage: https://gaspublishers.com/gasjahss/ ISSN: 3048-5002

Application of Artificial Intelligence Technology in Finance

Yue He[1], Wendi He[2]

School of Economics and Managemengt, Southwest Petroleum University, Chengdu, Sichuan, China, 610500

DOI: 10.5281/zenodo.13923638

Paper History
Received: 10-10-2024
Accepted: 12-10-2024
Published: 12-12-2024
C/A: Yue He

Abstract: The deep integration of finance and artificial intelligence showcases the wide application of AI in this field, driven by the rapid development of new-generation information technologies. The paper first combs the development of AI and its application in finance. Secondly, it introduces AI's application status in finance from the perspective of financial intelligence, including basic, risk control and compliance, and personalized applications. Thirdly, it discusses application risks like technical, information security, regulatory, moral, and investment risks. Finally, it proposes countermeasures and suggestions for the discovered risks and prospects future research problems.

Keywords: Artificial intelligence, financial technology, application risk.

INTRODUCTION

In recent years, as China's economy enters a new stage of high-quality development, the financial industry is transforming. It shifts from an extensive growth model to an advanced one focused on refined operation, technology-driven and intelligent management. Innovative services bring new vitality and a better financial experience, promote resource allocation and service coverage, play an indispensable role in China's financial field, and lead the industry towards a more intelligent and modern direction.[1].

1. The Development of Artificial Intelligence in the Financial Field

From the 1960s to the 1980s, the academic community began to conduct preliminary exploration and attempts in the financial field. During this period, the research focus was mainly on how to combine information transmission technology with specific financial services, but the intelligence level was relatively low, mainly relying on simple computational intelligence for basic data processing and analysis[2].

From the 1980s to the beginning of the 21st century, artificial intelligence began to be widely used in the financial field. Internet technology breaks the shackles of time and space and provides a boost for distributed information processing and integration. Since the beginning of the 21st century, it’s application is no longer limited to the level of perceptual intelligence, but gradually to the stage of cognitive intelligence, bringing more far-reaching innovation and change to the financial industry[3].

2. Application Status of Financial Intelligence

Compared with traditional financial credit information, which mainly focuses on the characteristics of financial attributes, the research of artificial intelligence model realizes the comprehensive consideration of multidimensional data such as finance, government public services, daily life and society by integrating big data and Internet technology, which is significantly different from the traditional credit information.

For enterprises, AI has demonstrated a strong ability to accurately identify core elements such as products, services, and business models involved in regulatory regulations to help enterprises effectively address regulatory requirements and compliance challenges. Buckley et al. (2023) note that regulatory reforms in financial services and data protection in the European Union have driven the adoption of AI by regulators to support a more efficient, stable, and inclusive financial system. [4].

With the continuous progress of economy and society, the needs of financial users have far exceeded the scope of universal services provided by traditional financial institutions. Lee &Shin(2020) believes that artificial intelligence can help banks meet the personalized needs of users; Banks use machine learning to analyze various transaction scenarios, match product price to value, and increase bank revenue [5].

3. The Application Risk of Artificial Intelligence in the Financial Field

With the continuous evolution and increasingly in-depth application of artificial intelligence technology in the financial field, The key reason for this is that the underlying algorithms and operational modes of artificial intelligence show remarkable homogeneity. Like a ripple effect, thereby causing systemic risks, bringing huge impacts and challenges to the entire financial ecology and triggering systemic risks (Khiaonarong & Goh,2021) [6].

The regulatory practice of Internet finance shows that China mainly relies on post-event supervision when dealing with disruptive financial innovation, and its regulatory means are mostly focused on the response and remedy of risk events that have occurred. However, with the rapid development of cutting-edge fintech technologies they are gradually penetrating into the core functions and business areas of finance such as risk management and asset pricing[7].

When artificial intelligence is integrated with the financial industry, in view of the characteristics of its deep learning ability, people begin to worry about whether it may lead to the risk of manipulating the market after learning, or lead to market chaos due to wrong identification and learning.

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