Research on Fintech Methods Based on Artificial Intelligence

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Abstract—The financial industry is one of the earliest and most comprehensive industries that integrate with artificial intelligence. The application of a series of artificial intelligence technologies such as data mining, accurate profiling, machine learning, neural networks, will provide financial products, service channels, service methods, risk management, Credit financing and investment decision-making have brought about a new round of changes. Firstly, the rapid development of artificial intelligence has a profound impact on the high-end finance of the deep service value chain; Secondly, the integrated development of artificial intelligence and finance is irreversible, risks and opportunities coexist, and the financial industry must accelerate the pace of adjustment and development; Finally, the financial supervision department further clarifies the supervision responsibility, applies artificial intelligence technology to supervision methods and means, and improves the degree of supervision automation and intelligence.

1. INTRODUCTION
The term "artificial intelligence" is a Dart organization organized by John McCarth in 1956. The discussion meeting of the Mouss summer research project proposed to explore where the machine can simulate human intelligence. As early as the 18th century Thomas Bayes pointed out that provides a framework for calculating the probability of management events, which was originally characterized by artificial intelligence technical ideas. In the 19th century, George Bull pointed out that logical reasoning can be the equations are executed systematically. At the beginning of the 20th century, the first electronic computing the advent of the robot marked the first generation of robots capable of sensing and acting autonomously[1-3]. Alan Turing envisaged the construction of “Computer and Intelligence” in 1950. The possibility of building computers to simulate human intelligence, including how to test artificial intelligence ability, how the machine learns independently, etc. In the following decades, artificial intelligence the ups and downs, the problems that emerged in the research far exceeded expectations. In the late 1990s, people industrial intelligence research focuses on specific fields and applied research, and has entered an accelerated phase. Its China is particularly prominent in image recognition and medical diagnosis. In 1997, IBM fat Computer "Deep Blue" defeated the world chess champion Kasparov; Apple Siri, IBM answered the computer Watson in answer to the game show to win; 2010 years later, from government, e-commerce, business, social media, science and government provides available big data and powerful computing capabilities, and the technology industry is increasing investment in the field of artificial intelligence, the above factors have promoted the wave of artificial intelligence development tide[4-5]. At the same time, deep learning technology is developing rapidly. In the field of image recognition, human the error rate was 5%. The best result of
artificial intelligence in 2011 was 11%. It was reduced to 3.5% in 2015, and AlphaGo, a gaming
technology, defeated humans go champion and so on[6].

The National Science and Technology Commission’s “Preparing for the Future of Artificial
Intelligence” in 2016 pointed out that there is currently no universally accepted definition of artificial
intelligence. Some people define artificial intelligence as a computerized system that can perform
behaviors that are generally considered to require intelligence; others define artificial intelligence as a
system that can be reasonable regardless of the complex problems encountered or take appropriate
actions to achieve its goals. Although the definition of AI is not clear and changes over time, the
research and application of AI always adhere to a core goal, even if human intelligent behavior is
automated or copied. The US Office of the President’s Administration pointed out in the “Artificial
Intelligence, Automation, and Economic Report” in 2016 that AI is not a single technology, but a
collection of technologies applied to specific tasks. In 2017, the strong artificial intelligence defined by
"Science" refers to having the same wisdom and complete[7].

The intelligence of the face. The Centennial Research on Artificial Intelligence at Stanford
University, "Artificial Intelligence and Life in 2030" broadly defines artificial intelligence as an activity
dedicated to machine intelligence, and intelligence refers to the predictive function of a system in its
environment. In July 2018, the German artificial intelligence strategy overview pointed out that as a
scientific discipline, artificial intelligence refers to a research field that develops and trains computers to
perform intelligent behavior methods that only humans can previously have[8].

Finance includes a lot of supervision knowledge. Artificial intelligence can help the financial
industry achieve better supervision, serve employees and those who come to do business, and get a
better banking experience. With the rapid development of my country's economy, the financial industry
has also become an industry that our daily lives cannot do without[9]. Therefore, the combination of
artificial intelligence and finance can better serve people and accelerate the economic development of
our country.

2. THE RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE AND FINANCE

2.1. The integration basis of "artificial intelligence + finance"
If we take capital and mechanical kinetic energy as the driving force of global modernization since the
era of great navigation, then data will become the core driving force of the next technological
revolution and social change. With the emergence of the Internet, mobile Internet, and the Internet of
Things, data has shown explosive growth, and finance has accumulated a large amount of data in the
course of business operations, including customer information, transaction information, and asset
liability information. The McKinsey research report takes the banking industry as an example and
points out that for every 1 million in revenue generated by the banking industry, an average of 820GB
of data is generated. Although financial data is difficult to obtain, it is one of the most valuable data of
all data.

The financial industry is the most extensive and deepest application of artificial intelligence
technology. Its participants include not only technology companies that provide artificial intelligence
technology services for financial institutions, but also traditional financial institutions that apply
technology, emerging financial formats, and financial regulatory authorities. According to the different
financial services that apply artificial intelligence technology, the intelligent financial model can be
divided into intelligent investment advisory, intelligent customer service, intelligent risk control,
intelligent marketing, etc.

The robo-advisor business process basically consists of the following steps: the first step is risk
testing, which involves obtaining basic customer information through risk questionnaire surveys, KYC
customer insights, data behavior modification, etc., and conducting preference insights; the second step
is asset allocation. Use traditional quantitative models, machine learning algorithms, and customized
solutions; the third step is process guidance, using self-service account opening and one-click asset
allocation; the fourth step is asset management, through asset portfolio dynamic distribution, warehouse
adjustment and Transaction and visual query; the last step is post-investment service, push through intelligent consultation, and intelligent marketing of wealth management products. As shown in Figure 1.

![Figure1. flow chart](image_url)

2.2. The impact mechanism of artificial intelligence on the financial sector

Talent is an important resource. With the promulgation and implementation of various financial opening policies, China’s financial industry has entered a new stage of rapid development. It urgently needs more talents to join the industry, especially more new financial talents to meet the growing financial needs. Market demand, for enterprises, diversified businesses require diversified financial technology compound talents. In recent years, the traditional financial industry has actively carried out structural optimization and transformation and upgrading. Fintech is one of the transformation directions. The development of various advanced technologies has changed the traditional form of operation, using technological means such as big data, cloud computing, and artificial intelligence. In the process of transformation and upgrading, financial institutions. The demand for compound talents will also increase.

On the basis of the original financial education, it is necessary to strengthen interdisciplinary education. Interdisciplinary smart finance requires relevant practitioners to master multidisciplinary knowledge such as finance, computer and information. Therefore, colleges and universities must pay attention to the intersection of finance and other disciplines in curriculum planning. At the same time, it is necessary to bring forth the new, and actively explore related courses such as big data analysis, artificial intelligence and financial integration, and Internet finance to improve students' comprehensive ability and cultivate students' all-round development. Finance is a natural application scenario of artificial intelligence. The degree of standardization and dataization of finance itself is relatively high. Although the rules are complex, they are clear and clear. How to abstract a complex financial rule into something that can be learned by machines and something that can be used by artificial intelligence is part of the mission of financial technology workers and is also a basis for future financial education.

Fintech also incorporates artificial intelligence ideas and big data ideas. It is increasingly inseparable from intelligent technology in financial applications. Therefore, combining artificial intelligence and financial ideas can create better sparks. In this way, intelligent development in the financial field can be realized.

3. FINANCIAL REGULATORY INNOVATION IN THE ERA OF ARTIFICIAL INTELLIGENCE

The relationship between financial institutions and technology companies has evolved from a relatively simple outsourcing partnership to a multi-faceted interaction relationship in business, accounts, data, technology, and infrastructure. In this case, the boundaries between financial and technological attributes of various institutions have become blurred, and the legal relationships and responsibilities between institutions have become more complicated. However, the main job of financial intelligence is finance, which is only upgraded and innovated on the original basis. Its financial attributes remain unchanged. While establishing an open cooperative relationship between financial institutions and technology companies, they should not be erratic and ambiguous in terms of business boundaries, legal relationships, and division of responsibilities. They should follow regulatory and

Self-discipline requires that the corresponding management standards, market constraints and emergency arrangements should be effectively strengthened. Moreover, any financial activities must not be separated from the regulatory system, must strictly abide by laws and regulations, and must not use technology
The name obscures the nature of financial activities. The establishment of financial institutions to engage in financial activities must accept access management in accordance with the law. The main body of access management, the main body of daily supervision and the business scope of the practice institution should be consistent, and the supervisory authority should be given corresponding rights, determine the scope of rights, and make it clear Own supervisory principles.

To strengthen off-site supervision based on big data, its core technical method is to collect financial Data related to the operation and management of the organization enters the big data platform, and builds a supervisory data mart based on the platform. Through the supervisory mart, a comprehensive analysis of the operation status, risk management, and compliance status of each organization is conducted, and the problems in risk management and compliance Evaluation and analysis of performance and robustness. Use customer portrait, machine learning, dynamic linking and other technologies to divide high-frequency trading customers into groups, establish a user portrait system, monitor abnormal trading accounts in real time, and find problems in time. Third, use machine learning algorithms such as neural networks, SVM, XGBoost, GBDT and other algorithms to apply to risk monitoring and early warning, use models to evaluate data sets, improve risk identification capabilities, and increase supervision automation.

Financial institutions need to closely follow the country strategic guidelines and policies, make corresponding adjustments within the enterprise, and cooperate with national decision-making to form good innovations for the financial intelligence. Secondly, the policy guidance itself needs to be gradual. The gradual progress here means that in the process of financial innovation, policy guidance must be easy first and then difficult, basic work must be done before overcoming difficulties, so as to maintain the innovative vitality of the financial industry and promote more advanced The emergence of technology. Finally, policy guidance must keep pace with the times and continuously improve industry standards. Under the premise of a good strategic, national policies should vary from time to time, focusing on industry security and information security, adopting pilot projects from advanced units, summing up experience, and then launching large-scale expansion.

No matter what in the industry, information security is a topic of special concern, especially in the information-filled industry of the financial industry. It’s not just hacking. The application scenario of artificial intelligence is the interaction between people (consumers) and machines (representatives of operators). In many cases, it’s no longer the interaction between people. This will make consumers feel that they are facing It's a machine. As a smart device, the machine is dressed in the cloak of science. However, there are still people behind the machine. There are people intentions behind this cold or cute machine, and consumers mistakenly think it is Established and scientific. This will increase the possibility that consumers' rights and interests will be harmed, while consumers are unaware of such harm. In addition, artificial intelligence is based on big data, and it will inevitably collect, process, and use massive amounts of personal information in the course of its business, so it will involve the privacy of customers and the protection of personal information. How to effectively protect them is also a current problem. Although the advantages of artificial intelligence in information processing are obvious, artificial intelligence technology can indeed provide tremendous convenience for the development of the financial industry, and significantly reduce its consumption costs in terms of human and material resources. However, when other criminals attack the computer network system, the consequences and harms are incalculable.

4. CONCLUSION
Through the connection between the financial industry and artificial intelligence, we can draw the following conclusions:

(1) Combining the characteristics of the financial industry and the characteristics of artificial intelligence, in-depth analysis of the reasons for the integration of artificial intelligence and financial fields.
Combining case analysis of robo-advisory, smart marketing, and smart risk control, not only proposes the promotion of artificial intelligence applications to the financial industry, but also reveals the multiple potential risks of artificial intelligence in financial applications.

The development of the financial industry cannot do without computer means, and the prosperity of the financial industry cannot do without the aid of computers. As a result, the development of artificial intelligence channels and finance can bring better development to my country's economy.

REFERENCES

[1]. Military and Defense; Military University of Technology Researcher Discusses Research in Military and Defense (Analysis of the financial economy of the Armed Forces Modernisation Fund)[J]. Defense & Aerospace Week,2020.

[2]. J.D. Power; Investment in Technology Key to Winning War for Financial Advisor Talent, J.D. Power Finds[J]. Medical Letter on the CDC & FDA,2020.

[3]. Global Views - African Affairs; Findings from University of Electronic Science and Technology of China in African Affairs Reported (Financial Distress and Non-executive Director Compensation: Evidence From State-owned Enterprises In South Africa Post King Iii)[J]. Politics & Government Week,2020.

[4]. Economics - Economic and Financial Sciences; Reports from University of Johannesburg Describe Recent Advances in Economic and Financial Sciences (The impact of new production technology on employee productivity in the South African workplace)[J]. Journal of Engineering,2020.

[5]. Fuzzy Research; Studies from Dalian University of Technology in the Area of Fuzzy Research Described (Fuzzy Pricing of Binary Option Based On the Long Memory Property of Financial Markets)[J]. Robotics & Machine Learning,2020.

[6]. Spotify Technology S.A.; Spotify Technology S.A. to Announce Financial Results for Second Quarter 2020[J]. Journal of Engineering,2020.

[7]. SkyWater Technology; Steve Manko Joins SkyWater as Chief Financial Officer, Steve Wold Appointed Company's First Chief Administrative Officer[J]. Nanotechnology Weekly,2020.

[8]. Shaker Ahmed,Klaus Grobys,Niranjan Sapkota. Profitability of technical trading rules among cryptocurrencies with privacy function[J]. Finance Research Letters,2020,35.

[9]. Anna Geddes,Tobias S. Schmidt. Integrating finance into the multi-level perspective: Technology niche-finance regime interactions and financial policy interventions[J]. Research Policy,2020,49(6).