

## Flourishing Financial Operations Through Smarter Intelligence

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### **Abstract**

Artificial Intelligence (AI) has penetrated every aspect of our lives in this era of Big Data. Nowadays application of AI has become very common. It is also playing a vital role in the field of finance. AI has been helping in every aspect of finance, from banking to investment. AI has given the world of banking and the financial industry as a whole a way to meet the demands of customers who want smarter, more convenient, safer ways to access, spend, save and invest their money. Especially during pandemic situations, AI is playing the most important role in the field of finance by helping society to do financial activities digitally more securely, accurately but in a very handy way using data mining operations. This paper will attempt to focus on the emerging applications of AI to optimize different financial services.

**Keywords** : Artificial Intelligence, Big Data, Financial Industry, Data mining

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## **Introduction**

Artificial intelligence has been developed for more than 70 years and it has also earned some outstanding achievements. The application of AI in the field of finance has given a way for people to interact with money <sup>[1]</sup>. AI has helped people to become smarter by doing financial activities digitally. Mostly nowadays every people have access to a smartphone. With the help of the smartphone, AI has made financial activities easier, faster, accurate, and secure. Now anyone can do banking, trading, payments, etc. very easily, with the help of few touches within a few seconds. Especially during this pandemic situation, people have become more friendly with digital payments.

In recent years many applications (apps) have been developed for doing financial activities digitally. There are many apps for doing monetary transactions to any shop, E-commerce website, or any person. There many apps for those who want to do trading or want to invest in mutual funds virtually. There is also a facility for doing internet banking. In every field of finance, the application of AI has shown remarkable performance. Initially, some people were scared of doing digital payments whereas some have shown their enthusiasm. Not only like AI has also helped in the field of corporate finance in various ways. AI helps the financial sector in optimizing and streamlining processes that vary from credit-related decisions to quantitative trading and financial risk management.

## **Background Study**

The term "Artificial Intelligence" was coined in the year 1956 at a conference at Dartmouth College, in Hanover, New Hampshire <sup>[2]</sup>. According to McCarthy, "Artificial Intelligence is the science and engineering of making intelligent machines." It is an inseparable part of computer science. It tries to make activities easier for humans. The term 'artificial' itself describes that this intelligence is different from natural intelligence which is seen in humans or animals. AI technology is created to function intelligently and independently as humans do. It is used to analyze a large complex dataset, which is a bit difficult for humans to do manually. It takes less time than humans to perform any task as per given information. So, it can be said that AI technology has made activities easier for humans and provides accurate results.

Though in today's world, AI is used vastly, but still, we are in the era of Narrow AI, where AI is not that much intelligent as a human, but it can perform tasks faster than human. It will take some more time to reach the era of General AI and then Strong AI when machines will become more intelligent than human beings.

## 1. Emerging AI Across Different Avenues of Finance

AI has been developed for more than 70 years but its applications were limited to some fields only. But now the application of AI has accelerated <sup>[3]</sup>. People now have become so comfortable using AI in financing activities that they sometimes prefer to do financial activities digitally rather than doing that physically. For example, nowadays GPay or Paytm or any other payment app has become a much more convenient way of making payments rather than giving cash hand to hand, especially in this pandemic situation, where everyone is doing ordering online to avoid going outside from home and get in touch with other people. Financial activities with the help of AI has become so safe and secure that people can rely on them without any hesitation. Earlier, those who were not so convinced to do financial activities digitally, nowadays, they are also doing financial activities digitally. Even our phones have become more secure with the help of AI. We can use the fingerprint sensor to secure our phones and others can't access our phones until and unless we unlock it.

### • 1.1 AI Assistance in Credit Decisions

Nowadays credit is something with which everyone is very much accustomed, whether it is a credit card or a credit score. A recent study has found that 77% of people prefer paying with a debit or credit card compared to only 12% who favor cash payments <sup>[4]</sup>.

People now prefer paying not only with cards but they are preferring different payment apps for making payments now and then. They are finding it a more convenient, safe, and secure way for making payments. Earlier many people were not interested to use such apps as they find it easier to pay with cash and they were also scared to share any sort of bank details on a virtual platform. But it is quite obvious that in this situation the percentage of people who are doing financial activities with the help of AI has increased remarkably.

The credit score is an important factor for loan procedure. With the help of AI, it has become easy for any individual to check his/her credit score. There are some apps which help people to get loan virtually based on their credit score.

AI solutions are helping banks and credit lenders to make smart decisions by utilizing a variety of factors that can be assessed more accurately rather than assessing those traditionally. Thus, AI is playing a vital role in the credit decision-making process. Zest Automated Machine Learning (ZAML), DataRobot, Scienaptic Systems, Underwrite.ai, etc. are some example of AI which helps in credit decisions.

- **1.2 Risk Management Through AI**

Time is money. People take the risk by investing money, but the risk can be deadly if proper attention is not given. For this reason, accurate predictions are crucial for both the protection of money and the speed of the growth of money. Financial markets are becoming more and more AI-based to create more exact nimble models<sup>[4]</sup>. These predictions help financial experts to utilize existing data. It helps to understand pinpoint trends, identify risks, conserve manpower, and ensure better information for future planning. Kensho, Ayasdi, etc. are examples of the application of AI for risk management.

- **1.3 AI and Fraud Prevention**

People of modern society are very fond of making transactions digitally. They always try to go cashless. So, huge quantities of digital transactions take place every day. They make payments, pay bills, deposit checks, trade stocks, and more via online accounts and apps. So, there is always some risk of fraud in transactions. AI has come up with a solution to this problem. Nowadays it is indispensable for banks and other financial institutions to ramp up their fraud detection efforts and cybersecurity facilities. With the help of AI, every financial institution and app, which helps in monetary transactions, are trying to make their transactions safe and secure. Shape Security, Darktrace, Cognito, etc. are some examples of the application of AI used for fraud prevention through data mining.

- **1.4 AI and Trading**

In this era of inflation, everyone wants to grow their money rather than keeping it idly. Nowadays almost everyone is interested in trading. AI has helped all those trade lovers by making trade easier. For trading, it is required to analyze large data sets and find out the patterns that can be used to make trading strategies.

AI-powered computers can easily analyze large, complex data sets faster and more efficiently than humans. The results generated by it are quite accurate. AI has helped people to understand and analyze the market trend and whether it is good for them or not. Many apps have been launched with the help of AI to make trading easier. People find it secured also. They can trade as per convenience. Earlier, the person with no idea of trading used to go to an agent, who helps them to do trading. But now AI has made this process very easy. Some apps can help him by analyzing the financial markets on behalf of him and show the best results which will be appropriate for him. With the help of chatbots, people can also ask their questions and clear their doubts. AlphaSense, Kavout, Alpaca are some examples of the application of AI in trading.

- **1.5 AI and Personalized Banking**

Time is a very important thing for everyone. People are getting so busy nowadays that they are getting time to go to the banks. Traditional banking is not that convenient for people, it was earlier. Especially during this situation where people were restricted to go outside. So, they became fond of net banking which uses AI technology to provide customers better results securely and simply.

According to a study conducted by Accenture based on 33000 banking customers, 54% of the customers wanted tools to aid them in adjusting real-time spending and monitoring their budgets. Moreover, 41% were "very willing" in using computer-generated banking advice. This study was done on some 33,000 banking customers.

AI assistants, such as chatbots, are used to generate personalized financial advice. NLP (Natural Language Processing) also helps to provide instant, self-help customer service. Now people find it convenient for their use and they can get every bank-related detail without going to a bank. KAI, Abe AI, Trim, etc. are some examples of AI applications in personalized banking.

- **1.6 AI and Process Automation**

From the very beginning, AI has tried to automate the manual processes. It has always tried to make the work of humans easier and easier. In the field of finance, AI has also helped a lot. Many apps have made financial activities so easy with the help of AI. Let us discuss this with an example, suppose there is a huge dataset which is collected from a survey and now it has to be sorted. AI can help to sort that huge data. Just we need to feed the dataset or we can scan the data and upload it to any applications and it will give the result as per our requirement. So, there is no need to go through manually to find out any particular information. There are also many other examples of the application of AI in process automation. Like system-generated emails, texts, calls, chatbots, etc.



### Impacts of AI on Finance Services

AI has a recognizable impact on finance. It has made many financial activities easy, and it also helped them to save time. According to analysts and experts, AI will save the banking industry roughly \$1 trillion by 2030. Many banks and financial institutes have already incorporated AI technologies in their system. The applications of AI in finance can provide fast, reliable, and accurate results. The new wave of innovation done by AI mainly focuses on customer experience. With the help of AI, financial services have become more easy, secure, and customer friendly. Like, chatbots have become a more friendly option for customers, rather than going to the bank and stand in a queue and then clear their doubts.

- 2.1 The Future of Finance Using AI

The finance sector is facing a radical transformation with the application of AI. Deloitte reports that "the economic fundamentals are strong, the regulatory climate is favorable, and transformation technologies are more readily accessible, powerful... than ever before <sup>[5]</sup>." Everyone has high expectations regarding the future. With the rapid development of AI, people think that there will be more security for financial services. Digital assistants and apps will become more safe and secure day by day. It will provide more accurate results in the field of risk management and trading.

As we all know the process of financial services is changing day by day. It is coming up with new ideas through which the process can be made more secure and efficient. The transaction has become more transparent than before. Instant notifications are sent. So, people always stay notified about their financial

activities. AI is penetrating every aspect of financial services to make it more and more secure, customer-friendly.

Finance is a sensitive domain and everyone wants to make their safe and secure from any sort of fraudulent activities. So, AI is coming up with new technologies, like Retina Pattern, Iris Scan, Fingerprint, Handprint, Voice Pattern, Keystroke Biometric Authentication <sup>[6]</sup>, to make this field more secure. Though these technologies aren't used widely, till now, many financial institutions are adopting this technology to make their financial services more secure and reduce the risk of fraud.

## **Conclusion**

AI has become an inseparable part of our daily life. Especially during the time when there is the scope of doing most activities from home. All are using different kinds of financial apps for doing financial activities easily, securely, and quickly on digital platforms. People are finding these convenient and more secure through bio-informatics collaborations. Though there is some risk, AI has tried to make the activities as much secure as possible using cryptography. The smarter and accurate predictive Financial strategies are expanding many promising avenues and sub-avenues of Financial services to be benefited from human society.

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