

The Role of Artificial intelligence Tools in accelerating and enhancing financial services.**دور أدوات الذكاء الاصطناعي في تسريع وتحسين الخدمات المالية****Pr. Nadir Troubia¹, Pr. Larabi Moustapha²**¹ Ahmad Draia University- Adrar (Algeria), nad.troubia@univ-adrar.edu.dz² Tahri Mohamed university- BECHAR (Algeria), mlarabi82@yahoo.fr**Received:** 02/12/2024**Accepted:** 31/12/2024**Published:** 31/12/2024**Abstract:**

Artificial intelligence is to create machines that are able to imitate human being in many tasks such as learning, thinking, teaching, communicating and especially solving problems. This is widely used in order to improve the people's life. The leaders of financial industry are struggling in order to making financial services more efficient by utilizing the AI applications.

This study aims to highlighting the main applications of AI technology that financial companies implement in order to enhance its services. The study concludes that financial and banking institutions mainly apply AI in various ways such as Algorithmic trading, Banking chatbots and Fraud detection.

Keywords: Artificial intelligence, financial services, applications, chatbots, strategy.

JEL Classification Codes : G2, N2.

ملخص:

الذكاء الاصطناعي هو إنشاء آلات قادرة على تقليد الإنسان في العديد من المهام مثل التعلم والتفكير والتدريس والتواصل وخاصة حل المشكلات. ويستخدم هذا على نطاق واسع من أجل تحسين حياة الناس. يسعى قادة الصناعة المالية من أجل جعل الخدمات المالية أكثر كفاءة من خلال استخدام تطبيقات الذكاء الاصطناعي.

تهدف هذه الدراسة إلى تسليط الضوء على التطبيقات الرئيسية لتقنية الذكاء الاصطناعي التي تنفذها الشركات المالية لتعزيز خدماتها. وخلصت الدراسة إلى أن المؤسسات المالية والمصرفية تقوم بشكل أساسي بالذكاء الاصطناعي بطرق مختلفة مثل التداول الخوارزمي وروبوتات الدردشة المصرفية واكتشاف الاحتيال.

كلمات مفتاحية: الذكاء الاصطناعي، الخدمات المالية، التطبيقات، روبوتات الدردشة، الإستراتيجية.

تصنيفات JEL: G2, N2.

The Role of Artificial intelligence Tools in accelerating and enhancing of financial services

1. Introduction:

Today, the individuals' life became more comfortable and safer thanks to technological inventions. People increasingly use these inventions, anytime and anywhere, in order to achieve their tasks effectively, efficiently and fast. In addition, the world has been changed by these inventions which formed our past, aided us to manage properly our present, and also helped us to expect best conditions of living for the future.

All governments are relaying on technological innovations to build prosper future for their people. Anyone can imagine difficult the world would be without getting

There are many forms of technological inventions that have changed both the world and the life of human beings. It is really hard to mention all of those inventions that Man has invented till now; however, the most fascinating of them are the personal computer, cellphone, internet, and of course artificial intelligence.

Artificial intelligence strategy is simply how to make machine behave same way than human, whether in thinking, learning, answering, or mainly solving problems. The world of artificial intelligence has known a huge development during this last two decade, and gets used approximately in everything. In this respect, domain of finance is increasingly depending on technological tools especially Artificial intelligence, so that clients can get access to the whole financial services only through their cellphone 7/24.

Based on what we have already presented, the **essential problematic** of our research paper would be:

What are the different artificial intelligence tools that financial institutions apply to accelerate and enhance their financial services?

Our main problematic can be divided into **sub-questions**:

- What does artificial intelligence usually mean?
- How many types of artificial intelligence are there?
- Does artificial intelligence affect the sector in which it is involved?
- What are the main AI applications employed to enhanced financial services?
- How does artificial intelligence strategy impact financial industry?

Then our research paper aims to realize the following **objectives**:

- Finding out what does artificial intelligence mean
- Displaying the different major types that artificial intelligence strategy has.
- Highlighting the benefits and risks of artificial intelligence;
- Presenting and analyzing of the main AI applications used to master financial services.
- Examine the advantages of AI in financial industry

2. What is Artificial intelligence?

Artificial intelligence is a crucial term that needs to be perfectly defined. It is possible to encounter a lot of definitions given to it when reading about it. The first definition that has been created for AI was in 1955 by John McCarthy. He confirmed that “the goal of AI is to developed machines that behave as though they were intelligent” (Ertel, 2018, p. 1). Several scientists claimed that the John McCarthy’s definition is not enough to describe AI because it is missing other goals which are extremely important.

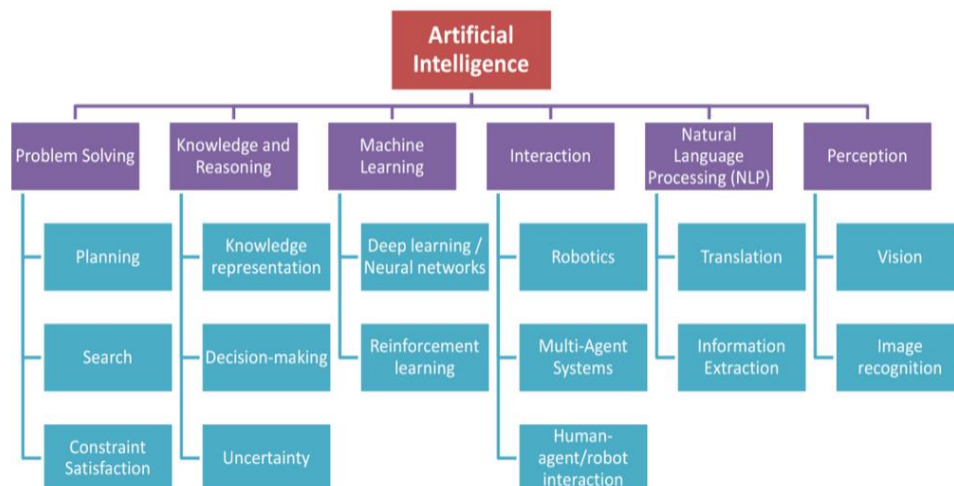
In the same year, McCarthy, Minsky, Rochester and Shannon proposed a definition of AI in a well-known document in which they said “for the present purpose, the artificial intelligence problem is taken to be that of making a machine behave in ways that would be called intelligent if a human were so behaving” (Dignum, 2019, p. 9). The definition tries to explain the meaning of AI focusing on its main purpose that is programing a given machine to act is the same way as human being does.

In 1978, Professor Donald Michie described AI as knowledge refining, where “a reliability and competence of codification can be produced which far surpasses the highest level that the unaided human expert has ever, perhaps even could ever, attain” (Crawford, 2021, p. 7).. In my opinion, the more precise meaning of AI is that “the science of designing machines capable of doing things that require intelligence when they are done by humans” (Lexcellent, 2019, p. 5)

Everybody agrees that AI is strongly related to computer discipline. This strict relationship with computing brings on AI two essential perspectives. The first one is the engineering perspective, which reveals that the aim of AI is to find real solutions for problems by establishing machines that behave intelligently. The second one is the scientific perspective, which seeks for recognizing what type of computational systems are needed for designing intelligent behavior (Dignum, 2019, p. 11).

Having intelligent machines or means, that act intelligently and efficiently, requires numerous features like understanding language, fixing problems, learning, programing, thinking, selecting, classifying and so on. These features and other constitute several sub-fields of AI. It is simple to determine how many sub-fields are there and how they are connected to AI; however, experts present the most appropriate areas of AI which are displayed in the next shape.

Figure 01: possible classification of AI's areas



Source: Virginia Dignum, Responsible Artificial Intelligence, Springer International Publishing, Switzerland, 2019, P12.

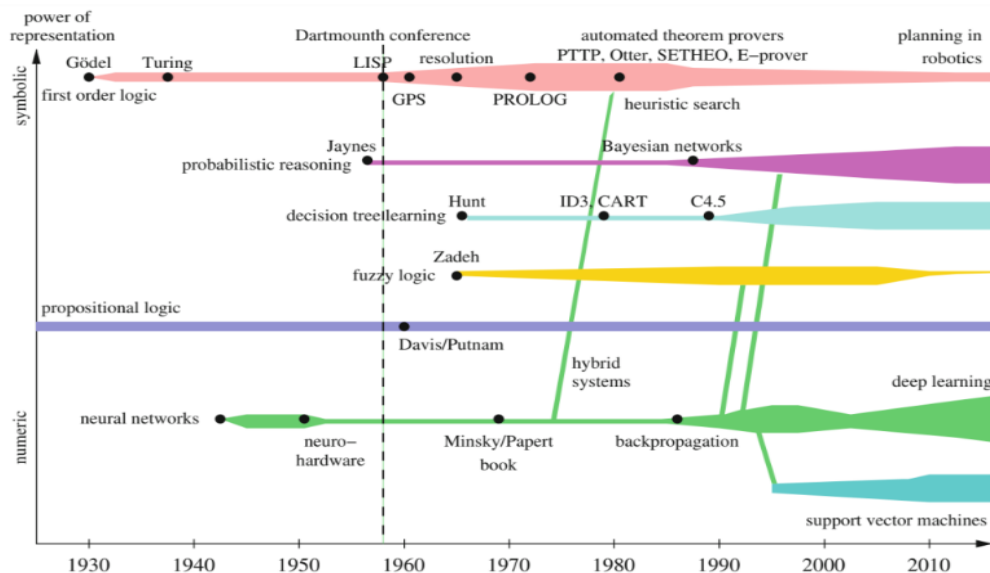
AI opens a large window on the future world in which every single task would be achieved effectively and efficiently. In other word, AI globally means creating intelligent machines to do some intellectual activities such as understanding, learning, recognizing and solving complex problems.

The Role of Artificial intelligence Tools in accelerating and enhancing of financial services

3. The history of artificial intelligence:

The main different steps of the evolution of AI over time are drawn in the following image.

Figure 02: history of the various AI areas



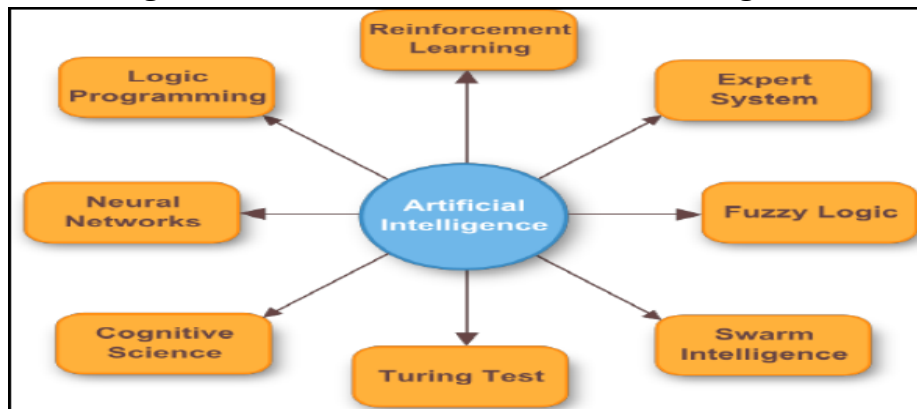
Source: Wolfgang Ertel, Welcome to the new Google Books, Springer International Publishing, London, 2018, P8.

As we have mentioned above, AI belongs to computer science; therefore, the appearance and evolution of AI's field has been occurred in combination with the growth of computer stages. Actually, the birthday of AI was at Dartmouth Conference in 1955. This birth has come as a special result of two systems; the first was called Logic Theorist and introduced by Newell and Simon. The second was the invention of McCarthy which was a programming language specialized for the system of symbolic structures (Ertel, 2018, p. 8).

Some literatures of AI talked about Alan Turing as one of the famous scientists in the domain of AI. Turing, in one of his papers, tried to answer the question "can a machine think". Besides, he applied a test, Turing Test, while answering the question. A few years later, Marvin Minsky and Dean Edmonds invented the first AI computer referring, basically, to work of McCulloch and Pitts. In addition, there was the crucial contribution of Lotfi Zadeh during 1960s by launching the concept of "Fuzzy" sets and systems – explaining that computers cannot behave in a merely binary, but can also perform in human-like, Fuzzy way (Warwick, 2013, p. 2.3).

From the background that we have seen about AI, the picture below summarizes the different significant elements that marked the history of AI.

Figure 03: Factors included in artificial intelligence.



Source: Mudit Verma, Artificial intelligence and its scope in different areas with special reference to the field of education, International Journal of Advanced Educational Research, Volume 3, Issue 1, January 201, P5

2010 is considered as the onset of AI revolution in which the world witnessed a series of very sophisticated inventions. To be clearer, scientists could finally concretize their incredible dreams. For example, there was the birth the very strong deep learning networks that are able to select significantly images, and appearance of smart self-driving vehicles and useful robots (Ertel, 2018, p. 11).

4. The different types of artificial intelligence:

Generally, AI can be divided into three categories (Shnurenko, Murovana, & Kushchu, 2020, p. 3):

Artificial narrow intelligence: it's also called weak AI. category of AI means creating a specific model for a specific task based on its rules and directions. The most famous example that illustrates this type is AI machines for playing many games like chess

Artificial general intelligence: it's also named strong AI it's located in a higher level than weak AI. This type is different from the precedent in the way that the model establish for a given domain can be generalized for other similar domains. Here, science is attempting to invent AI devices whose behavior is closer to human being. For example, if anyone learns to drive polo, he will certainly be able to drive other cars.

Artificial super intelligence: in this case of AI strategy, scientists of AI are seeking to produce machines or applications whose intelligence is highest than human intelligence. At the moment, there is nothing can beat human being intelligently, but researchers are working on this kind of AI in order to make it true in the future.

5. The benefits of artificial intelligence:

Since technology invaded our life, everything changed in a way that a person became able to achieve anything easily and excellently. Thus, AI in a very advanced form of technology from which humankind gained many benefits (Haque, 2020, pp. 41-44):

High-seed in the data processing: AI is particularly based on employing computers to perform very quickly orders. Moreover, computers can beat humans in learning large pieces of knowledge, and finding needed information no matter how big dada is.

The Role of Artificial intelligence Tools in accelerating and enhancing of financial services

Reducing errors: AI also means programming machine to receive orders and make best decision counting on data that are collected previously. So, the utilization of machine helps users to reduce widely errors.

Correct decision making: the existence of AI nowadays may save lives by fixing human errors and sometimes by changing decision making. Indeed, when a driver mistakes a way while driving his self-driving car, AI algorithm will correct this conduct and switch into right way.

Elimination of dangerous situations: this feature is approximately similar to the precedent. AI scientists are working on set some AI applications which are equipped to get people life away from dangers and risk. These sophisticated tools will be able even to expect possible dangerous cases whether in sea or on the ground.

Creative work: one of the most magnificent AI's benefits is to have a creative achievement. Since machine learning, that is a key part of AI, can learn, think and act in intelligent manner, the result will certainly be creative. AI technology aids companies to keep providing markets with useful new products.

Perceiving the feelings of others: what rules people's relationships is their feelings and emotions. Although it is not easy to understand others feelings, AI may facilitate this complicated mission.

24/7 work: human being needs to get away from work to rest, but machines and robots don't even if it spends many hours, maybe days, in operating. This ability confirms the huge interest of AI in our daily life.

Increasing productivity: as we saw above, machines can do many stuffs such as acting quickly, saving time, making creative objects, and working without stop. All these characteristics emphasize that the large use of AI leads to more productivity.

Simulating and activating innovation: AI guarantees a very prosper future for humankind. Because of AI technology, every single sector will know more and more innovations.

6. The risks of artificial intelligence:

Likewise, any technology, AI may present a set of bad points especially when we excessively use it without examining the process and expecting the results. Generally, the major risks of AI can be classified as following (Shnurenko, Murovana, & Kushchu, 2020, p. 22):

Regulatory risks: they appear due to regulation issues.

Technical risks: they may happen while moving from collecting of data to the stage of a model building or operation implementing.

Consequential risks: these risks are mostly intended and usually appear during or after the performing of AI strategy.

Unknown risks: experts, who are dealing with computer science or AI techniques, believe that AI field includes risks but still undiscovered. These risks are quite complex and unpredictable.

7. Artificial intelligence technology and financial services:

In financial areas, technology aims to offer all of the financial services in automated and perfect way using technology applications. By implementing AI in financial sector, customers become more satisfied with these services. In fact, with the support of AI intelligent customers can now perform any transactions from just their cellphone.

Barclays Bank was the first bank that presented an automated form of finance by introducing ATM in 1967. In the next decade, other banks introduced card-based payments. After that, people started getting familiar with digital banks which was a previous step to inventing mobile-based “on the-go-banking” at the beginning of the last decade. In addition, AI facilitates the growth of financial inclusion where everyone became able to get access to financial services or products at low price regardless their income (Nasrallah, 2021, pp. 6-7).

8. Advantages of using AI in financial field:

The financial experts see that using AI tools in finance would bring many positive points, mainly including (Ganjali, 2023):

1. Enhanced accuracy: by using AI applications, the financial managers will be able to predict best data and make excellent decisions about their projects not to mention getting significant trades.
2. Passive trading: AI machines permit a financial speculation which is passive and robotic.
3. Enhanced customer services: customer or client is going to get best services if they are offered by AI directions.
4. Minimalized costs: the majority of costs related to financial operation will be reduced thanks to AI applications.

9. Artificial intelligence applications in finance system:

It is clearly that people usually use technology to finish properly their works today. Thus, the individuals, who are dealing with finance issues, prefer some of modern ways to achieve efficiently and effectively their financial operations. In this respect, AI applications become more frequent in finance. In general, there are seven applications including in the following table.

Table 01: Artificial intelligence applications in finance industry.

Financial operations	AI applications
Lending	Retail Lending Operations
	Commercial Lending Operations
	Retail Credit Scoring
	Commercial Credit Scoring
Investments	Robo-Advisory
Operations	Debt Collection
	Procure-to-pay
	Account Reconciliation in Commercial Banking
Insurance	Insurance Pricing
	Claims Processing
Audit & Compliance	Fraud Detection
	Regulatory Compliance
	Travel & Expense Management
Customer Service	Know Your Customers (KYC) Processes
	Responding to Customer Requests
	Identification of upsell & cross-sell opportunities
	Customer Churn Prediction
Other	Trading

Source: by author referring to: Mallika Rangaiah, 7 Applications of AI in Finance, published on Aug 05, 2021 on the website: <https://www.analyticssteps.com/blogs/7-applications-ai-finance>, seen on Aug 28, 2023.

The Role of Artificial intelligence Tools in accelerating and enhancing of financial services

Based on those applications, AI is permanently modifying the financial services industry. This change can take different aspects, but we are going to focus only on three major elements which are: fraud detection and compliance, banking chatbots and robo-advisory services, and algorithmic trading (Buchanan, 2019).

9-1. Fraud detection and compliance:

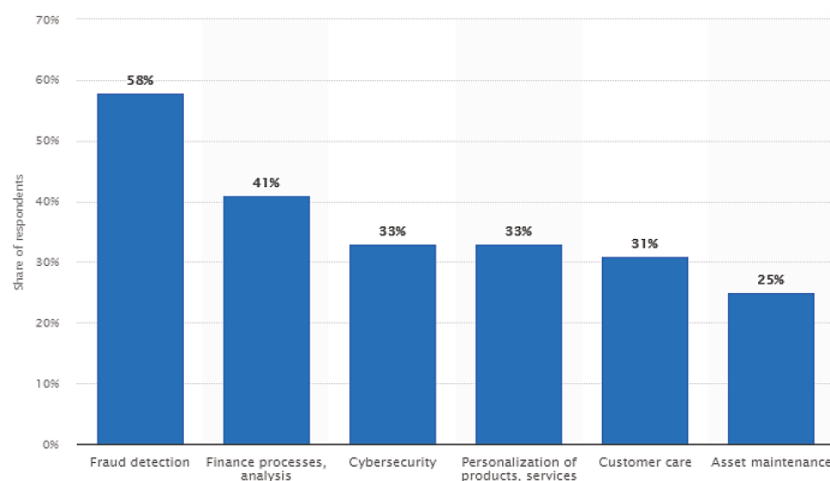
Many official organizations are strongly interested in how to detect fraud in different financial channels and clearly in how to fight against it. The notion of fraud has many definitions. The American institute of chartered public accountants defines two essential forms of fraud: international misstatement of financial information and misappropriation of assets (Coderre, 2009, p. 18). However, other agencies have added more details into meaning of fraud that can be appeared in this appearance: “fraud consists of an illegal act (the international wrongdoing), the concealment of this act (often only hidden via simple means), and the deriving of a benefit (converting the gains to cash or other valuable commodity)” (Coderre, 2009, p. 19).

The fraudulent activities keep increasing in the financial domain and; as a result, make banking sector lose an incredible amount of money per year. Between 2015 and 2016, the rate of reported cases of payments-related fraud has raised by 66% in the UK. This critical situation costs the UK bank about five million pounds to fight against it each year.

Several estimations provide a list of indications that show the volume and financial affectation of fraud (Baesens, Vlasselaer, & Verbeke, 2015):

- A typical organization loses five percent of its revenues to fraud each year.
- The whole cost of insurance fraud in the United States is higher than 40 billion dollars per year.
- The UK is losing around 73 billion pounds a year because of fraud.
- Credit card companies bear almost seven cents doing hundred dollars of transactions because of fraud.
- The estimated body of the informal economy as a ratio of real GNI in 2000 is 41 percent in developing countries, 38 percent in transition countries, and 18% percent in OECD countries.

Figure 04: use cases of AI in the financial services industry across the world in 2020



Source: Nermeen Magdy Nasrallah, Using Artificial Intelligence (AI) in Banking Services, Arab Monetary Fund, United Arab Emirates, 2020, P13.

It is not effective today to stop all possible forms of fraud with a simple technology that necessities the intervention of human beings. Thus, many banks' managers introduce AI tools to with financial transactions efficiently. In fact, machine learning ML, which is an essential part of AI, is able to check a huge number of data very fast and separate right operations from fraudulent ones. Furthermore, the ML is also used to help fraud detection systems to know intelligently the new threats and select them.

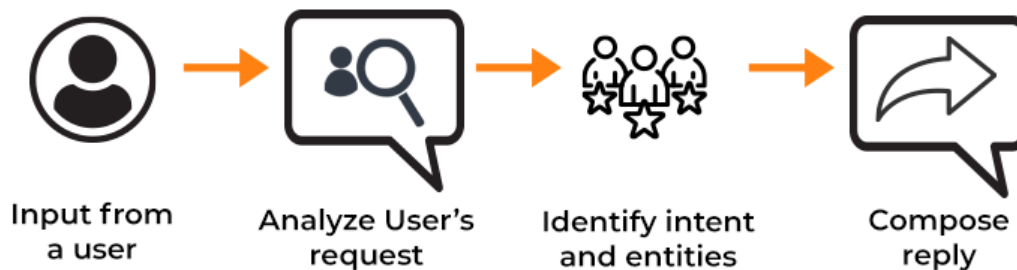
On the other hand, there are some ML applications that can detect credit card fraud. They are called monitoring systems which are programed on the set of operations of the card over time. The process includes algorithmics training, back testing, and validation. Then, all fraudulent transactions will be certainly classified through these steps of verifications (Buchanan, 2019, p. 11).

9-2. Banking chatbots and robo-advisory services.

Due to financial crisis in 2008, the need for a chatbot and robo-advisories becomes quite important for customers. A robo-advisory is a creative aspect of AI. It is “a digital platform that provides automated, algorithmic-driven financial planning and investment services with little to no human supervision. A typical robo-advisor asks questions about your financial situation and future goals through an online survey. It then uses the data to offer advice and automatically invest for you” (Frankenfield, 2023). A robot-advisor may intelligently help individuals not only to pick profitable investments but also to buy excellent banking products and choose perfect insurance policies.

However, chatbots is “A chatbot is an artificial intelligence (AI) program that simulates interactive human conversation by using key pre-calculated user phrases and auditory or text-based signals. Chatbots are frequently used by organizations to provide 24-hour customer relationship management (CRM) services” (Rouse, 2023). Chatbots are machines programs enabled to analyze all kinds of dialogue and communicate as smoothly as humans. The Chatbots procedure contains four stages as the following figure shows.

Figure 05: A sophisticated Chatbots inner workings



Source: Chiradeep BasuMallick, What Is a Chatbot? Meaning, Working, Types, and Examples, seen on 21/09/2023 on website: <https://www.spiceworks.com/tech/artificial-intelligence/articles/what-is-chatbot/>

Many financial companies rely increasingly on Chatbots to achieve a lot of tasks. The use of these machines provides several advantages such as (Scardina & Brush, 2021):

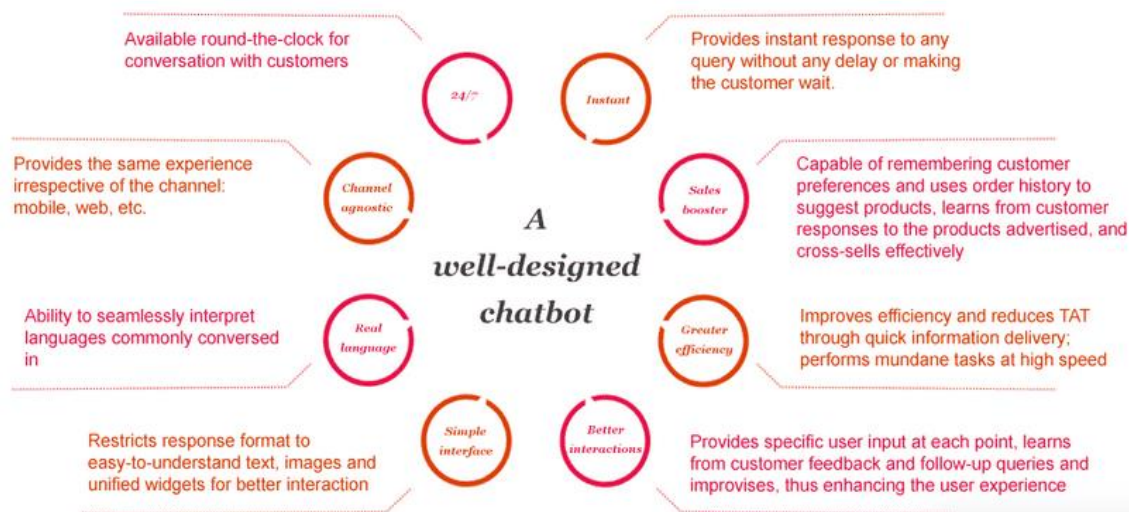
- making numerous conversations at the same time.
- helping users to reduce cost.
- helping employees to manage the time efficiently.
- giving customers opportunity to be proactively interacted.
- improving customers engagement.

The Role of Artificial intelligence Tools in accelerating and enhancing of financial services

- facilitate scalability to global markets.
- developing the user base.
- measuring lead qualifications.

To know how Chatbots technology reacts in banking area, it's necessary to recognize three main mechanisms which are rules-based processes, AI-driven decision-making, and live agent intervention (BasuMallick, 2022). The banks spread especially conversational Chatbots into their systems in order to master customers' practices, so banking services become easily reached. The following shape exposes clearly different roles that Chatbots can play.

Figure 06: The main roles of Chatbots on banking platforms



Source: Ananya Azad, 8 ways chatbots in banking can improve customer engagement, seen on 10/09/2023, on website: <https://www.engati.com/blog/chatbots-for-banking>

An AI chatbots can support financial experiences of clients in different ways such as Plum, form of Chatbots, which is able to enhance banking industry, and then to make people save money in quick supplements through Facebook Messenger. To do that, Plum refers to customer's bank account in order to know his income and his periodic transactions, and then Plum's AI application can decide how much a user would save (Buchanan, 2019, p. 14).

There is another type of chatbots that is used to improve and protect banking services. This application is named Erica. It's launched by The Bank of America. We have also COIN which is an AI technology that analyses documents and collects data very fast than human being. JP Morgan has spent a lot of money to establish COIN.

To manage perfectly insurance functions, there are some AI tools for that such as Amelia and Lemonade. Unlike Lemonade, Amelia is built to understand the user's purposes and respond them. The creation of Amelia is made through a set of steps including several insurance topics, individual DL, specific language, and of course data examinations. It has been started in September 2017 to handle over three million client conversations into call center. Lemonade is generally used to give very fast services for home owners and renters (Buchanan, 2019, p. 14).

It's necessary to mention that each chatbot must contain some characteristics to be effective in banking field. They mainly involve in five factors (Azad, 2023):

- a) A chatbot must be conversational. The customers must feel a little bit comfortable when they ask chatbots for advices. Therefore, experts essentially create Chatbots that behave like humans.
- b) A chatbot should be transactional. A transactional chatbot means that it can perform a list of banking functions like creating account, sending money, and facilitate all kinds of transactions between banks.
- c) A chatbot must maintain and protect retrieved data's confidentiality. It is designed to allow only authorized personnel to check available data.
- d) A chatbot must be reliable and precise. This feature is certainly quite important because it permit to avoid any mistake or error customer get contacting with his account.
- e) A chatbot should be available on most platforms. Users usually exploit many devices and access many accounts on social media. So it is important for banking chatbot to be available anywhere to ensure the safety of customers' accounts.

9-3. Algorithmic trading:

Algorithmic trading, is also named Automated Trading Systems, is the most crucial element in the world of finance. Its birth was during 1970's. Algorithmic trading is defined as "placing a buy or sell order of a defined quantity into a quantitative model that automatically generates the timing of orders and the size of orders based on goals specified by the parameters and constraints of the algorithms" (Kim, 2010, p. 9).

The term often refers to "automated trading wherein investors and traders enter and exit trades as and when the criteria match as per the computerized instructions. The systems are coded with instructions to undertake trades automatically without human intervention. It saves a lot of time for investors who can take more and more trades due to their quick execution time" (Vaidya, 2023). Algorithmic trading simply means the execution of trades by computer directions referring to specific rules.

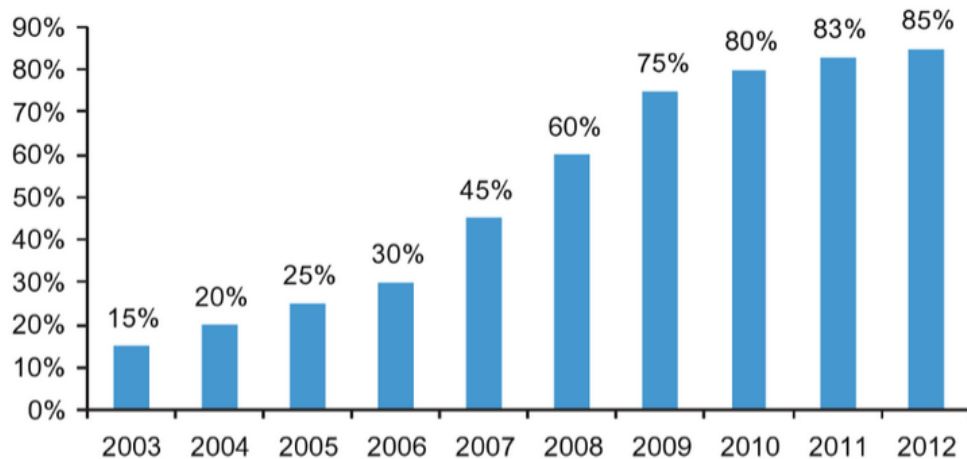
The algorithms can be built to do all aspects of trades very quickly and effectively. Thus, they mostly adopted in some special markets like stocks, foreign exchange, cryptocurrencies, and derivatives. The algorithms trading recently include AI materials such as machine learning and deep learning which make them more sophisticated for making good and fast decisions based on revising digital financial information and all what passes on social media platforms (Bylund, 2023). To illustrate, computers produce around 50-70% of fair market trades, 60% of futures trades, and 50% of treasuries (Buchanan, 2019, p. 15).

The volume of algorithmic trading reached 25% of the whole industry in 2005. The field of algorithmic trading knew a significant development, so its operations jumped to 75% in 2009. The reason of this fast growth was mainly the impacts of financial crisis where investors suffered from a real difficulty to follow orders.

A group of specialists confirm that the large growth of algorithmic trading is owing to fast cost reduction, best controls, drop of market impact cost, greater probability of successful trade execution, speed, globalization and the increase in competition, and the enormous strides in improving sophisticated and spread technology (Leshik & Cralle, 2011, p. 3).

The Role of Artificial intelligence Tools in accelerating and enhancing of financial services

Figure 07: Algorithmic Trading Percentage of Market Volume



Source: Robert Kissell, *the Science of Algorithmic Trading and Portfolio Management*, Elsevier Science, New York, 2013, P12.

In the period of financial crisis, people, who were dealing with financial market, were precisely connected to urgent trading and sourcing liquidity and the majority turned to “liquidity seeking” algorithms to get away from the high market exposure; not to mention that the crisis brought in higher market fragmentation because of multiple venues and pricing techniques and, of course, a propagation of dark pools. (Kissell, 2013, p. 20)

There are some strategies should be executed if we want to make algorithmic trading profitable. The first one is Mean Reversion Strategy. It means that an asset price will keep moving in average levels when it decreases badly. Furthermore, the algorithms watch the prices fluctuations and then buy or sell assets if there is a best opportunity. The second strategy is Statistical Arbitrage. It is very special and demands higher techniques to implement. Its key goal is to profit from the convergence of the “fair value” ratio of any pairs of assets. Its main method is seeking for these pairs, which are out of line, and trading them later. In addition, there is market timing strategy which means collecting profits by a list of trades at main market turning points. However, the strategy necessities to be aware about market cycles in order to hunt profitable moments for trades (Haeems, 2022).

Momentum is also a part of algorithmic trading strategies. The work of this technique is essentially based on how to predict future values counting on a series of previous observations. The strategy is not recent, but the fact that it has been providing significant results for long time pushes traders to associate with algorithmic trading. Traders may also follow other algorithmic trading strategies like Trend Following, Risk-On/ Risk-Off, Inverse Volatility, Black Swan Catchers, and Index Fund Rebalancing (Birmingham, 2022).

Any investor has to study carefully the markets before choosing an accurate algorithmic trading. By the way, the establishment of an excellent algorithmic trading should include five important steps (Thakar, Bhagat, & Singh, 2022):

- Step 1 - Decide upon the strategy paradigm
- Step 2 - Establish the statistical significance
- Step 3 - Build a trading model
- Step 4 - Quoting or hitting strategy
- Step 5 - Backtesting and optimization

Step 6 - Risk and performance evaluation

Experts determine three factors that have motivated the utilization of data in algorithmic strategies and perhaps modify the investment industry. First of all, the biggest increase in the volume of digital data. Secondly, the bomb in computing power and data storage capacity at lower cost. Thirdly, the last element is the advances in Machine Learning methods for analyzing complex datasets (Jansen, 2018, p. 23).

It is quite important to mention that algorithmic trading has advantages and disadvantages. When it comes to advantages, there are (General, 2020):

- The software generates orders accurately and rapidly.
- The software exploits historical and recent data for backtesting to create appropriate trades.
- The algorithmic carries out trades at the best possible prices.
- Algorithms minimize the risk of manual errors when they make trades.
- Bots reduce transaction options.
- The bots reduce people's mistakes because of high emotions since their money is involved.
- The software correctly times trades to avoid substantial price changes.

On the other side, using algorithmic trading may present multiple negative points such as (Kissell, 2013):

- Without taking in consideration market conditions, users can work on the same algorithms as long as they get familiar with it.
- Investors need to always examine algorithms in order to be certain that they are working perfectly.
- The algorithms are not designed to handle all of the unexpected events. In other words, when something bad happens, it may cause disliked results and huge costs.
- Users tend to ensure regularly that both algorithms and their investment are doing well, but the problem is that procedure is becoming hard because of time and algorithmic trading rules.
- Some algorithms are not descriptive and don't provide insights into how it will trade during the day. As a result, users have to watch an enormous number of algorithms to realize all changes producing inside.
- The rise of algorithms and going down of traditional specialists and market marker functions has led to a more difficult price discovery process at the open.

10. Conclusion:

Finally, we saw so far that artificial technology particularly belongs to computer science. Its main goal is to invent machines and tools that have the ability to behave as human does, but more efficiently and effectively. AI brings some benefits like reducing cost, saving time, protecting identities and eliminating errors. AI is now in every single sector.

Financial and banking field includes the use of many AI applications, so that individuals now get access to a list of sophisticated, highest and significant services. Moreover, AI techniques help financial sector to achieve a lot tasks and fight against several risks. The main techniques are generally fraud detections, chatbots, and Algorithmic trading.

The Role of Artificial intelligence Tools in accelerating and enhancing of financial services

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