



## Article History

Submitted: 02-11-2024

Revised: 03-12-2024

Accepted: 07-12-2024

### Corresponding Author:

**Mohammad Ali**  
[m.ali.m2000m@gmail.com](mailto:m.ali.m2000m@gmail.com)

## Transformative AI Applications: Promising Value Faster Healthcare Development, Affording Petroleum Deception Suppression, Improving Cybersecurity, and Integrating Humanized Chatgpt for Conversational AI

**Mohammad Ali**  
Independent Researcher Iraq  
[m.ali.m2000m@gmail.com](mailto:m.ali.m2000m@gmail.com)

### Abstract

In this field, the use of Artificial Intelligence (AI) is revolutionizing a number of industries bringing novel solutions that challenge conventional approaches to order. This review explores the significant impact of AI in five key sectors: healthcare, petroleum industry, credit card fraud, Cybersecurity, Chatgpt. AI is useful for improving diagnostic and clinical decisions and for making drug development and patient comparison faster. In the petroleum industry, by applying AI in Fraud management, companies are reducing their exposure to fraud, and increasing accountability, therefore reducing their frequency of financial loss and poor operational flow. In cybersecurity, AI is stepping up as the frontline technology to identify threats in real-time, analyze patterns, and respond proactively while organizations are fighting off more complex cyber threats. Furthermore, with advancements like Chatgpt, or AI tools it is clear that the dynamic of interaction between human and computer has also begun changing for the better generalizing human-computer-interaction for different contexts such as customer support, learning, and mental health. However, AI has its own issue such as data privacy, the ethical issues involved in adopting AI, issue of bias in data and risk of misuse of AI, all of which have to be taken into consideration. Thus, as the AI technologies develop individuals represent a great potential to positively progress and improve if the usage of AI technologies is reasonable and ethical. The focus of this review is on the value of integration AI in updating industries, potential vulnerabilities, and the role of future investigation, government control, and cross-discipline cooperation in enhancing positive outcomes of these technologies as well as the management of negative consequences.

**Key words:** AI, healthcare, petroleum fraud, cybersecurity threat, Chatgpt, conversational AI, machine learning, fraud, cybersecurity threats, natural language processing, predictive analytics, automation, data privacy, ethical issues, applications of AI.

### Introduction

Artificial Intelligence is one of the few phenomena which has changed the face of industries and the society as a whole in recent years. AI's capacity for performing repetitive computations to leveraging the advanced thinking strategies of machine learning, natural language processing as well as deep learning has made it a major component modern advancement. This article delves into four critical areas where AI is making a profound impact: Forecasted applications of artificial intelligence include healthcare, petroleum LML, fraud detection, cybersecurity and conversational



AI of which is Chatgpt. Across healthcare, AI is changing the diagnostic, treatment and discovery landscape, to allow clinicians to deliver better care more quickly. This means it can help fill some of the gaps where for example health care is scarce or available only via the internet, and clients can have virtual appointments and undergo proper treatment [1]. Integrating of artificial intelligence to provide an intelligent system to scrutinize large amount of information and detecting of checking medical images for symptoms and signs that are minor to diseases would lead to enhancement of patient care.

The petroleum industry which is part of the world's economy comes with high risks of fraud and inefficiencies. AI has been exceptionally useful for preventing petroleum fraud through monitoring of activities, proper management and enhancing supply chain management, and compliance with policy requirements. Because of the ability of carrying out high degree of data analysis AI assists stakeholders achieve better protection of resources, increase in the level of transparency, and minimization on embezzlement through fraudulent activities [2]. Another area, where AI is becoming the essential thing is cybersecurity. Hackers have evolved the way they attack and more often conventional security measures are proven insufficient. Artificial intelligence is designed to expose possible threats as they occur in an organization and provide security measures that prevent these risks from materializing. Threat prediction and risk assessment measures come under the banner of predictive analytics and anomaly detection enhancing the use of AI in preventing cybercrime. However, when implementing it these are some of the issues that arise including ethical use, data privacy and adversarial attacks [3].

Chatgpt is an example of conversational AI, making it possible to consider large language models as the next generation of chatbots. Starting from the customer support all the way to educational tool Chatgpt demonstrates the wider range of AI capabilities in text comprehension and generation. So, it cannot be limited to small talk only as it can help to facilitate writing and brainstorming, as well as improving decision-making. However, to eliminate risks such as spreading of wrong information, and bias, its application has to be well handled. However, creating artificial intelligence into industries has never been an easy task [4]. Two main issues are major challenges:



one is data privacy and the other is lack of technical skills; the third is the issue of bias in the AI systems. Furthermore, it becomes necessary to ‘explain’ various issues, including the societal impacts of AI, like ability in job displacement together with ethical issues, to guide its appropriating use. The common relation that can be seen throughout these domains is the conflict of AI as progress and AI as threats. Current industries are helping to find the optimal balance between AI opportunities and its risks to achieve the maximum effect. Technical people along with the policymakers along with the help of the industry heads will be needed to make sure that AI remains a positive influence. In the next few sections, let’s have a closer look at how AI is changing these vital fields and what can be expected from this new technology in the future. From diagnosing complex diseases to detecting frauds in petroleum deals, from safeguarding web applications from hacking to holding intellectually merbobalisi conversations, AI has been thus far well on track as the applied innovation engine of the world today [5].

## **AI in Healthcare: A Revolutionary Overhaul of the Technique of Diagnosis & Treatment**

As a modern application of technology, integrating Artificial intelligence in the healthcare sector is revolutionized how different diseases are Dept diagnosed and managed as well as how patients receive their caring services. Today, the unlimited number of data sets, their identification and the provision of recommendations make it possible to solve some of the most urgent problems of the medical field with the help of AI. AI is being successfully used in improving diagnostic assessment, prescribing treatment, analytics, and results across the global healthcare spectrum. There could be no doubt that one of the primary areas where AI has been most helpful in healthcare is in diagnostics [6]. The main goal of implementing machine learning is to obtain better results in the medical images, particularly X-rays, MRI and CT scan results. For example, in fracture diagnosis, the AI system can detect minor details that may remain unnoticed by normal surgeons or doctors, like signs of cancer and degenerative diseases. These systems decrease the chances of wrong diagnosing resulting in early treatment and higher survival rates.



## Global generative AI healthcare market

### GLOBAL GENERATIVE AI HEALTHCARE MARKET USD BILLION (2022-2032)

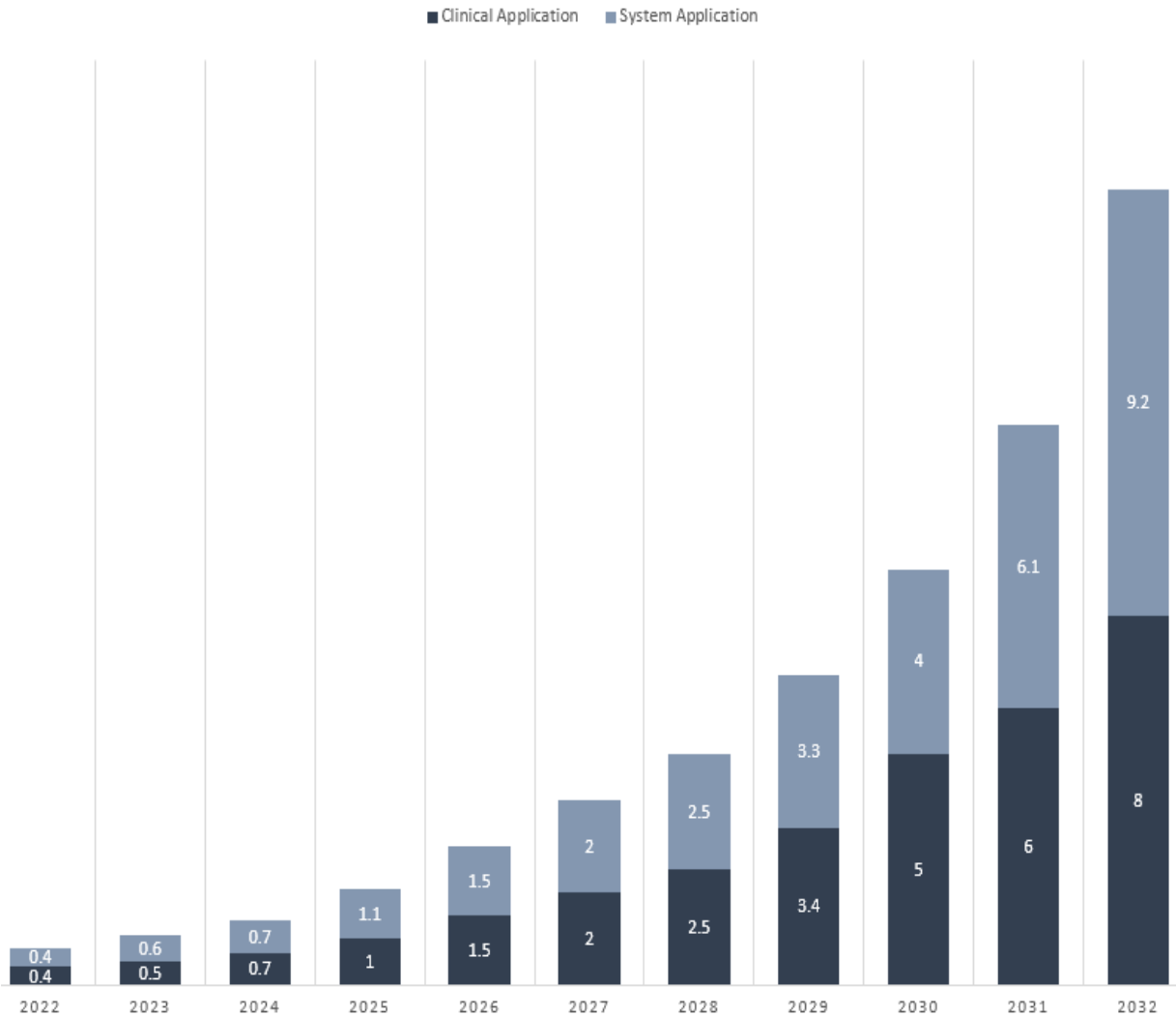


Figure: 1 showing global Ai healthcare market

In ways apart from imaging, AI is increasingly helping to identify diseases such as diabetes, cardiovascular diseases, and neurological diseases based on prediction analysis. From the stored history of patients and their complete genomic data or other factors, machine-intelligence models can then determine the propensity for or risks associated with the development of specific diseases so that necessary preventive measures can be applied. It is because this type of approach can help



avoid heavy pressures on healthcare systems and thus the suffering of patients. About AI playing a critical role in driving new drug discovery that is normally a lengthy and costly venture. Thanks to the AI algorithms, researchers can sort through numerous chemical databases, estimate the interactions of molecules, and define future drug candidates much faster [7]. Simulations applied in connection with AI allow clinical trials to select appropriate participants and predict the results, consequently, cutting many costs and timeframes. For instance, artificial intelligence contributed toward the accelerated process of creating coronavirus vaccines; machine learning algorithms used to support researchers estimate the virus's structure and make recommendations on possible points of attack. The same methodological approaches are used in other diseases are also being applied in other threatening illnesses, for example, cancers and genetic disorder.

Another big area that AI is advancing rapidly is precision medicine or custom medicine which makes use of an individual's genetic code to come up with treatments. By applying recurrence detection models and machine learning techniques AI algorithms cause genomic data, patients' medical histories, and real-time vital signs to produce individual care strategies. Besides, this approach enhances the efficacy of treatments without adverse effects since therapies are developed to meet each person's requirement. Smart wearable devices and mobile health applications developed through AI are also improving patient's ability to manage their health status continuously [8]. Some among them captures constant information about the client's physiological status and physical and even mental activities to enable the doctors to modify the treatment plan frequently and enhance chronic illnesses management. AI is changing the face of healthcare and at the same time, comes with a lot of concerns. Data privacy and security are a crucial factor necessary that should be put in place since the healthcare data is extremely sensitive. These advances also pose some questions about the rights, for example, the utilization of AI likewise raises issues about prejudice in apportionment of the accessible consideration [9]. In addition, the AI implementation needs proper support from infrastructure, dedicated personnel, and a substantial amount of money; factors that are sometimes hard for the underdeveloped areas. It could be stated that AI really holds the ability to revolutionize the entirety of the healthcare sphere. Of course if the efficiency gains are achieved by improving the ability to diagnose diseases at an earlier stage,



aiding in the discovery of new drugs and most importantly by developing personalized treatment, then AI is helping to make lives better and also helping to relieve pressure on healthcare systems. However, achieving the greatest potential is not complete without addressing ethical as well as logistical solutions to those challenges posed. The future of medicine is already evolving through the support of technologists, health care workers, and policymakers so that AI technologies will deliver high-quality health care to the community [10].

### **Petroleum Fraud Detection: AI Implementation in Energy Sector – from phishing and cyber threats to secure the industry**

The petroleum industry is one of the strategic support sectors of the modern market system which provides production and supply of energy resources. Nevertheless, being a high value industry, the sector faces inherent risks such as fraud, corruption, and inherent operational inefficiency. Misrepresentation of the production rates, lieu, saturation, fabrication of contracts and cases of embezzlement of funds can make up fraud in the petroleum sector. The above fraudulent practices can cause severe financial losses, rein image performances as well as act against laws and regulations [11]. AI is now a powerful senior tool for fighting fraud, providing solutions that allow to identify and stop fraud in real time during its implementation. Today, through the use of machine learning, pattern recognition, and data analysis AI has impacted how the petroleum industry prevents fraud, calculates its risk, and optimizes its operations.

Petroleum supply chain encompasses a production, transportation, refining and distribution network that is integrated. In each of these stages, there is a potential for fraud to occur where measurement data is faked or even where shipping is redirected and kickbacks are made. There is where AI steps in assist in identifying such anomalies and presenting early indicators that can alert users of malicious activities before out of control. Machine learning procedures can be trained to either normal patterns of operation and learn to detect abnormalities [12]. For example, in the context of transportation, AI powered systems may keep track of the petroleum products' shipment and alert the management of variations in the volume, routes or time of delivery. This is particularly useful in cases of fraud especially when barrels of oil are conveyed or disappear during



carriage. Furthermore, AI can verify the numbers from the pipelines, storage tank, and distribution terminals if there are any disparities which could have been fabricated.

The accuracy of these systems is also useful in flags suspicious financial transactions like; odd prices or concealed commissions. Using historical finance data and transaction histories, AI systems, for example, can find deviations, which are likely to be unnoticed by human auditors, in other words, it can help to detect fraudulent activities or embezzlement, poor financial management and so on [13]. AI is also utilized persuasively to crack down on fraud in the petroleum sector due to its proficiency in raising the level of transparency.. Therefore, block chain technology, in conjunction, with AI, can produce forms of record of the transactions, the shipments and the contracts that cannot be altered. This assures that all activities which occur in the supply chain are captured in the system and cannot be manipulated in any way, thus increasing on accountability [14].

AI can also be useful in helping operations of regulatory bodies as it offers real-time analytics helping organizations to know when and how they are breaching the law. For instance, where and when to apply AI systems is through monitoring weather oil companies are compliant with environmental laws or have met contractual requirements. Adopting AI for regulatory reporting enhances its efficiency eliminating human error and comes along with a quicker way was implementing anti-fraud measures. AI application in the petroleum industry has a social impact such as the use of predictive analytics. Through the use of historical databases, the artificial neural networks produce an efficient prognosis of potential risks and sources of fraud or other operational problems [14]. For example, data can be used in predictive analytics to predict a market price and therefore a company financial risk. These models can also be used to identify potential imminent equipment breakdowns, unauthorized diversion and or future fraud cases as a result of learned patterns thus enabling business organizations to avert new threats.

The same applies to auditing as part of its general predictive capability of enterprise applications. AI can monitor processes on an ongoing basis as opposed to annual or even cycle's ad hoc reviews that are conventional. Whereas, in manual systems the process of monitoring transactions, records,



and compliance can take days, months and even years, automated systems can do it in real time leaving little time for the fraudsters to perpetrate frauds. There are a few examples of where AI has been deployed and applied to identify and stop fraud in the oil sector. For, example, the large international oil companies have adopted use of Artificial intelligence in monitoring of production, transactions, and supply chain fraud. In one case, AI was able to pick on complex fraud that involved under- stating the production of crude oil, which had cost millions of dollars in revenue. This was after the AI implemented consistent checks on the production data and noticed irregularities that led to an audit. The second example can be traced to applications of artificial intelligence in monitoring pipelines [15]. Computer models have also been applied to recognize high pressures in pipelines or temperature changes that could mean tapping or stealing of products. One of the most prominent applications of using AI systems is in contexts such as managing pipelines with sensors and alarms to report potential malicious behavior, for example a decrease in pressure besides natural fluctuations, or excessive increase in temperature, may signal an act of theft.

Nevertheless, the use of AI in the detection of petroleum fraud is not without some challenges as will be seen. Data quality is paramount consideration—AI systems depend on big data and the data has to be of high quality [16]. Inaccurate, incomplete, or inconsistent data lead to negative consequences for the performance of AI system and increase the numerous false positive and suspect frauds. The industry requires individuals with the expertise in matching the right problem to the appropriate algorithm, programming the system and executing the system in an intricate working setting of the petroleum industry. This includes data scientists, cybersecurity expert and fraud analysts who can ensure that the systems are right and met the required norms [17].

## **AI in Cybersecurity: Protecting From New and Newer Threats**

As industries are shifting towards embracing digital transformation, there has been a staggering amount of data created, exchanged, and archived online. This has made cybersecurity one of the most critical issues of concern for organizations throughout the world. Traditional security measures are proving fast to be inadequate to tackle the new age security threats, which are on the





rise, far more varied and much more severe. Consequently, AI evaluation as a leading innovation breaker that has helped organizations to defend against cyber threats, identify possible weaknesses, and respond to risks in the cybersecurity process [18]. AI in cybersecurity is the process by which cybersecurity specialists are empowered with machine learning (ML), deep learning (DL), and other approaches with the intention of analyzing patterns and making predictions with regard to potential attacks and or other security threats. The first way that AI is transforming cybersecurity is through the increased detection of threats in the system. This is a big difference between the traditional security tools like firewalls and Antivirus software that respond to threats based on network rules and signature based now. Although they are reliable in detecting familiar threats and vulnerabilities, these systems have limitations in detecting new types of threats or attacks, including zero-day threats or threats embodied in new forms of malware. Whereas AI can quickly identify vast amount of network data information in real time and then use machine learning to determine certain patterns of attribute that is typical of malicious activity [19].

For instance, it is possible to examine the traffic within a company's network and pinpoint the irregularity that might mean there is already a DDoS attack, ransom ware infection, or an insider threat. Machine learning models can also detect anomalous user activity, for example, gaining access to directories or programs they have no reason to work on suggesting data leakage, or if a user's account has been compromised [20]. But they enhance such a feature as unknown threats' recognition and whereas people grow weary and get used to conventional attacks, new data make AI models more efficient than ordinary approaches. Another great accomplishment of AI is to examine patterns of past malign assaults and find conceivable areas of weakness. This technology detects patterns in past security threats, for instance, earlier hacks or attempted hacks, then will use the knowledge to make future predictions. AI systems are useful because they can predict the probability of an attack to occur in light of past experience and then allocate efforts to the most vulnerable parts [21].

For example, AI models can identify an organization's network for the likelihood of an attack and areas that are vulnerable by hackers. In this way, organizations are able to know the most likely



way an attacker will approach, the chances of a breaching happening, and even prepare for counter measures, patches and other defenses to be applied before a breach actually happens [22]. The ability to predict these threats is useful for early counter-offensive actions, commonly known as proactive defense strategies that give businesses a winning advantage against cyber criminals. AI also helps provide automated responses to the cyber threats which are very essential in today's world where time is of paramount essence. Many cyber-incidents progress in minutes and, in some cases, seconds; actions taken by humans may be too late to contain the threat. An AI system can simply isolate threats and proceed in defending itself within the shortest time possible, usually within minutes. For instance, while experiencing a data loss, or a malware attack, an AI system can independently quarantine the attacked machine, filter out malicious traffic, or even disable the ill-fated account [23]. The degree of automation provided by security tools, cuts down on the amount of time it takes the security department to get results, and subsequently on higher-level, more valuable tasks like identifying where the attack originated from or how to avoid similar weaknesses in the future. The ability of AI to deliver immediate automated actions is vital for rehearsing against high velocity cyber threats such as ransom ware which can encrypt data and lock down systems in hours [24].

When more organizational systems are shifting to cloud-based platforms or introduce IoT devices into their work processes, new problems in cybersecurity appear. These environments experience typically expose enlarged attack vectors – more endpoints to protect. Conventional security technologies could possibly fail to safeguard dispersed cloud architectures or even to assess the safety of different IoT gadgets since many IoT devices discourage the processing of various procedures because of limitations in their processing capacity and are easy targets for hackers. The capability of AI to address and extrapolate across massive distributed datasets is key to securing such environments [25]. In cloud security, AI models in the platforms can analyse the continuous traffic of the network, users and applications for the conspicuous signs of intrusion or other forms of malicious activities that might cause a data breach. Popular safety innovation IoT security can be improved with the help of AI as the usage of connected devices can cause specific unusual behavior, which can explain the occurrence of vulnerabilities or intrusions. From it, data



interpretations can also be made to identify likely vulnerabilities in device settings and interactions prior to hacking by malicious actors [26].

As we know, using AI has several benefits in cybersecurity; however, it also has certain impediments. One of the great challenges is the fact that AI systems themselves could suffer from adversarial attacks. Hackers can deceive AI by providing them with only false information, in which the AI will either make a wrong decision or not see a threat at all. For instance, the model can be trained with ‘poisoning’, a malpractice where a hacker feeds in wrong information into the model to help recognize improper behavior as appropriate or vice versa. Also it is important to talk about the ethical aspects of using AI in the field of cybersecurity [27]. The other issue raised by the use of AI in capturing and studying user behavior is the invasion of privacy; organizations are obtaining and processing personal information and with the excuse of helping the user when in fact, they are using this information to their benefit whilst endangering the user. Furthermore, use of Artificial intelligence in security decision making also brought a new risk of over-dependence on the technology, thus eroding the supervision of the human aspect in decision making processes. Introducing automated systems while also keeping some measure of human oversight in place is critical to ensuring that the use of AI in cybersecurity is done so to the best of the best practice standards [28].

Artificial Intelligence is now also a valuable weapon in the fight against cybercrime and offers organizations the capabilities for the detection and mitigation of cyber threats. According to machine learning, predictive analysis, automated tools AI is increasing threat detection, reducing response time, and improving security in all domains. However, reference should be made to the fact that carefully combine AI into the sphere of cybersecurity some potential threats such as an adversarial attack or ethical issues. While AI develops its prospects in the sphere of cybersecurity will be still more significant as this technology will help organizations adapt to novel types of attacks and safeguard their data more efficiently [29].



## **Chatgpt: Towards a New Definition of Human Computer Interaction**

In the past decade conversational AI has seen remarkable progression in how human like agents and human beings interact. It is possible to note the following outstanding example: Open's Chatgpt – today's sophisticated language model that significantly altered the interaction between people and computers. Chatgpt can analyze, generate, and answer to human language based on deep learning and natural language processing (NLP modes) almost with perfect manner. This introduced leap in artificial intelligence is not only changing how human interact with computers but also provide diverse applications in different sectors such as customer service, content generation, education and support for mental health [30].

Chatgpt has GPT the generative pretrained transformers its base on which it is trained using textual data to determine how to respond to people. Unlike the conventional ones that have a provision of a program where the chatbots depends on the response provided on the scripts of the program and the set rules, Chatgpt is capable of producing a variety of responses depending on the inputs it receives. This capability owes to the deep learning techniques—specifically transformer architecture—in that the model is in a position to capture the intricacies of language that include idiomatic expressions, slang and most importantly the connotations of words [31]. The transition from simple bots to more sophisticated models treated as Chatgpt is a real progress in the AI conversational field. Initial chatbots were very basic, only searching for keywords or working with decision trees in order to answer decreases. Unlike other search engines, Chatgpt is able to comprehend comprehensive questions and supply clear and pertinent contextual responses which give more natural touch to the conversation. They have enabled new forms of engagement and affordances bringing AI systems and use to an even wider customer base [32].

Due to the flexibility of the software, organizations in different industries have been using Chatgpt drastically. Customer support is accompanied by one of the most popular areas where companies use artificial intelligence to operate chatbots that answer the customers' questions, define the problems that occurred, or help to solve them. Chatgpt's bidirectional communication makes handling customer requests and replies much more efficient and saves time for customer service



teams while also providing customers with faster response times and more precise answers [33]. This means for companies it's possible to offer live round the clock support within the absence of actual human beings who are interacting with customers and yet making the interaction considering, insightful and helpful. Article writing, blogging, social media marketing and even creative writing is being done with Chatgpt by writers, marketers and journalists alike. When user inputs prompts or ideas to it, Chatgpt can effectively respond with polished and comprehensive write-up that can push through to the next step for more refinement or else can be utilized as is. This capability is most commonly beneficial in industries where a large number of products need to be produced or a large number of people require quick access to web content. In addition, Chatgpt can be programmed to produce the content in certain styles or using certain tone, which in turn makes it an effective means for developing content that suits individual user's preferences [34].

Education is another area where chat GPT is making a revolution. In a way, Turbot can help students in terms of giving out explanations, answering questions, and giving out individualized lessons. Whenever a student has to study, when a concept needs to be explained, or extra problems have to be solved, Chatgpt can be a great help, especially in a distance learning setup. That is why the opportunity to approach communication taking into account in each learner's learning style Chatgpt proves to be beneficial for students and teachers [35]. As it also address issue of access to education it also means that learner can participate in the model of delivery at their own suitable time and not under forcing conditioning of a classroom environment. However, an exciting development for Chatgpt has its implicit connections to mental health and well-being. The application of AI-driven chatbots, which index under GPT technology, is utilized as therapeutic assistants to give consumers solace or to direct them through calming routines or lessen anxiety and depressive conditions. These tools should not be considered as a replacement for professional help but can be used as a helpful supplement: the user gets help as soon as possible and can receive an emotional support when the therapist is offline [36].



Unfortunately, the high efficiency of Chatgpt and other conversational AI models raises issues that are common for AI systems. A particular element of it can be questionable – the possibility to misuse it. Obviously, this functionality can be used to spread false information, fakes, and scams, as Chatgpt produces texts that look like genuine articles written by a person. Given the current situation where the model is able to generate fairly convincing text it may become a way for scammers, propagandists, and possibly even identity thieves to employ the system. Therefore, developers need to put in place measures to guard against such risks, as well as, monitor the risks that exist [37]. The next ethical issue is related to the biases of the response given by AI. Chatgpt and similar AI tools are created from data pools that more often than not contain prejudiced or discriminative information. What this means is that Chatgpt might perpetuate some form of stereotype if not closely monitored and recalibrated or provide skewed data. Making an interaction fair and non-prejudiced is among the significant tasks for developers and analysts: It is their responsibility to prevent and minimize preconceptions in the developing AI model [38].

Privacy is important at the same that dealing with conversational AI involves privacy considerations as well. People may disclose their personal details during their conversations with Chatgpt they disclose their personal details risking their privacy. Programmers have to set specific standards and rules that are in force or how users' information is processed, and it is not used inappropriately or disclosed to third parties. It need be understood clearly how data is being used as well as given an option to not have one's data harvested by these AI systems. In the future, there are enormous opportunities for utilization of Chatgpt and other conversational AI models. In future versions of Chatgpt AI can be enhanced producing more natural and better power of interpretation of fine grain context, and incorporate different modes of input like images and voice input and personalization is even higher [39]. This may leave the door wide open for completely new applications, virtual assistants that can better understand customers' needs, or rather, AI companions that can engage in better conversations. Therefore, as AI systems such as Chatgpt continue to develop they can expand their capacity of helping with language translation hence enhancing cross cultural and linguistic communication as well as providing potentially enhanced service to the disabled. For instance, live translation and transcription with the use of Chatgpt could



enable individuals, global organizations overcome language barriers that currently hinder collaboration across different cultures.

Chatgpt is a sophisticated quantum leap in conversational artificial intelligence; people's approach to and communication methods with machines have been revamped. Due to its capability to interpret, create, and engage in human language it is ideal for wide variety of domains and sectors of economy: including customer support, content production, education, and therapy services. Nevertheless, there are ethical considerations regarding its application including misrepresentation, prejudice, as well as invasion of people's rights to privacy as the application progresses. When used wisely and properly, Chatgpt has the potential to revolutionize how we communicate, learn and engage with the Internet [40].

## **Conclusion**

Current development of Artificial Intelligence technology in different fields is refreshing the world in many ways. Applications range from detecting fraud in the healthcare and petroleum industries, cybersecurity to the newer and rapidly advancing domain of conversational AI with applications in the likes of the recent Chatgpt. Therefore in healthcare, it is possible to transform diagnosis, drug targeting, as well as, individualized treatment leading to better results and preventive measures. As for the petroleum industry, AI makes the transparency higher and reduces the fraud rates as well as helps to provide the effective supply chain management that leads to the better security and effectiveness of the given industry. In cybersecurity AI is taking central stage in identifying, checking, and combatting escalating threat levels, helping to protect data and infrastructure from cyber criminals. On the other hand, applications such as Chatgpt and other conversational artificial intelligence platforms are on the path of redesigning human computer interfaces permanently helping people and organizations in live time across various sectors ranging from education to mental health. However, there are some issues that would be associated with increased use of artificial intelligence in organizations. As with any powerful technology, questions of data protection, lapse into prejudice, interpretability, plus risks of misuse, require special attention to allow the effective optimization of AI value. Therefore, more than ever, society



will need innovative solutions like developers to employ proper AI development procedures and policymakers to put proper regulation in place. Finally, AI helps not only to refine processes and make them more effective but to create new patterns for entire industries and improve people's lives. The future holds great future in terms of even a more integration of AI technologies to drive progress and make sure that AI is a trusted player in addressing the toughest of the diversified challenges that cross through different industries and fields. Previous in parallel and integrated practices and through scientific study; AI will persist in reshaping entire sectors, recalancing human experience of interaction with technology for further enhancement of the globe.

## References

- [1]. Mehta, A., & Choudhary, V. (2023). COVID-19 as a Catalyst for Innovation: Pharmaceutical Industry Manufacturing Techniques and Management of Endemic Diseases. *International Journal of Multidisciplinary Sciences and Arts*, 2(4), 242-251.
- [2]. Lalji, S. M., Ali, S. I., Hussain, S., Ali, S. M., & Lashari, Z. A. (2023). Variations in cold flow and physical properties of Northern Pakistan gas condensate oil after interacting with different polymeric drilling mud systems. *Arabian Journal of Geosciences*, 16(8), 477.
- [3]. Lodhi, S. K., Hussain, H. K., & Gill, A. Y. (2024). Renewable Energy Technologies: Present Patterns and Upcoming Paths in Ecological Power Production. *Global Journal of Universal Studies*, 1(1), 108-131.
- [4]. Luengo-Oroz, M., Pham, K. H., Bullock, J., Kirkpatrick, R., Luccioni, A., Rubel, S., Wachholz, C., Chakchouk, M., Biggs, P., & Nguyen, T. (2020). Artificial intelligence cooperation to support the global response to COVID-19. *Nature Machine Intelligence*, 2(6), 295–297.
- [5]. Yekaterina, K. (2024). Challenges and Opportunities for AI in Healthcare. *International Journal of Law and Policy*, 2(7), 11-15.
- [6]. Valli, L. N., Sujatha, N., Mech, M., & Lokesh, V. S. (2024). Accelerate IT and IoT with AIOps and observability. In *E3S Web of Conferences* (Vol. 491, p. 04021). EDP Sciences.





- [7]. Drysdale, E., Dolatabadi, E., Chivers, C., Liu, V., Saria, S., Sendak, M., ... & Mazwi, M. (2019, October). Implementing AI in healthcare. In *Toronto: Vector-SickKids Health AI Deployment Symposium*.
- [8]. Khan, A. H., Zainab, H., Khan, R., & Hussain, H. K. (2024). Implications of AI on Cardiovascular Patients' Routine Monitoring and Telemedicine. *BULLET: Jurnal Multidisiplin Ilmu*, 3(5), 621-637. Panhwar, M., Keerio, M. I., Soomro, N., Jamali, A. R., & Lashari, Z. (2017). The role of presoaking in hydrogen peroxide and their involvement in salt tolerance in wheat genotypes.
- [9]. Arif, A., Khan, M. I., & Khan, A. R. A. (2024). An overview of cyber threats generated by AI. *International Journal of Multidisciplinary Sciences and Arts*, 3(4), 67-76.
- [10]. Khan, M. I., Arif, A., & Khan, A. R. A. (2024). AI's Revolutionary Role in Cyber Defense and Social Engineering. *International Journal of Multidisciplinary Sciences and Arts*, 3(4), 57-66.
- [11]. Choudhary, V., Patel, K., Niaz, M., Panwala, M., Mehta, A., & Choudhary, K. (2024, March). Implementation of Next-Gen IoT to Facilitate Strategic Inventory Management System and Achieve Logistics Excellence. In *2024 International Conference on Trends in Quantum Computing and Emerging Business Technologies* (pp. 1-6). IEEE.
- [12]. Khan, M. A. A., Hussain, M., Lodhi, S. K., Zazoum, B., Asad, M., & Afzal, A. (2022). Green metalworking fluids for sustainable machining operations and other sustainable systems: a review. *Metals*, 12(9), 1466.
- [13]. Rauf, M. A., Jim, M. M. I., Rahman, M. M., & Tariquzzaman, M. (2024). AI-POWERED PREDICTIVE ANALYTICS FOR INTELLECTUAL PROPERTY RISK MANAGEMENT IN SUPPLY CHAIN OPERATIONS: A BIG DATA APPROACH. *International Journal of Science and Engineering*, 1(04), 32-46.
- [14]. Khan, M. A. A., Hussain, M., Lodhi, S. K., Zazoum, B., Asad, M., & Afzal, A. (2022). *Green Metalworking Fluids and Other Sustainable Systems: A Review. Metals 2022*, 12, 1466.



- [15]. Jeni, F. A., & Al-Amin, M. (2021). The impact of training and development on employee performance and productivity: An Empirical Study on Private Bank of Noakhali Region in Bangladesh. *South Asian Journal of Social Studies and Economics*, 9(2), 1-18.
- [16]. Lodhi, S. K., Gill, A. Y., & Hussain, I. (2024). 3D Printing Techniques: Transforming Manufacturing with Precision and Sustainability. *International Journal of Multidisciplinary Sciences and Arts*, 3(3), 129-138.
- [17]. Rahman, A., Ashrafuzzaman, M., Jim, M. M. I., & Sultana, R. (2024). Cloud Security Posture Management Automating Risk Identification and Response In Cloud Infrastructures. *Academic Journal on Science, Technology, Engineering & Mathematics Education*, 4(03), 151-162.
- [18]. Mehta, A., Patel, N., & Joshi, R. (2024). Method Development and Validation for Simultaneous Estimation of Trace Level Ions in Purified Water by Ion Chromatography. *Journal of Pharmaceutical and Medicinal Chemistry*, 10(1).
- [19]. Uzzaman, A., Jim, M. M. I., Nishat, N., & Nahar, J. (2024). Optimizing SQL databases for big data workloads: techniques and best practices. *Academic Journal on Business Administration, Innovation & Sustainability*, 4(3), 15-29.
- [20]. Rahman, M. A., & Jim, M. M. I. (2024). Addressing Privacy and Ethical Considerations In Health Information Management Systems (IMS). *International Journal of Health and Medical*, 1(2), 1-13.
- [21]. Jeni, F. A., Mutsuddi, P., & Das, S. (2020). The impact of rewards on employee performance: a study of commercial banks in Noakhali Region. *Journal of Economics, Management and Trade*, 26(9), 28-43.
- [22]. Arif, A., Khan, A., & Khan, M. I. (2024). Role of AI in Predicting and Mitigating Threats: A Comprehensive Review. *JURIHUM: Jurnal Inovasi dan Humaniora*, 2(3), 297-311.
- [23]. Valli, L. N. (2024). Predictive Analytics Applications for Risk Mitigation across Industries; A review. *BULLET: Jurnal Multidisiplin Ilmu*, 3(4), 542-553.
- [24]. Agrawal, J. (2018). Stethee, an AI Powered Electronic Stethoscope. *Anaesthesia, Pain & Intensive Care*, 22(3), 412-413.



- [25]. Valli, L. N. (2024). A succinct synopsis of predictive analysis applications in the contemporary period. *International Journal of Multidisciplinary Sciences and Arts*, 3(4), 26-36.
- [26]. Agrawal, P. (2018). Artificial intelligence in drug discovery and development. *J Pharmacovigil*, 6(2).
- [27]. Angus, D. C. (2020). Randomized clinical trials of artificial intelligence. *Jama*, 323(11), 1043–1045.
- [28]. Chan, H. C. S., Shan, H., Dahoun, T., Vogel, H., & Yuan, S. (2019). Advancing drug discovery via artificial intelligence. *Trends in Pharmacological Sciences*, 40(8), 592– 604.
- [29]. Cruciger, O., Schildhauer, T. A., Meindl, R. C., Tegenthoff, M., Schwenkreis, P., Citak, M., & Aach, M. (2016). Impact of locomotion training with a neurologic controlled hybrid assistive limb (HAL) exoskeleton on neuropathic pain and health related quality of life (HRQoL) in chronic SCI: a case study. *Disability and Rehabilitation: Assistive Technology*, 11(6), 529–534.
- [30]. Samad, A., & Jamal, A. (2024). Transformative Applications of ChatGPT: A Comprehensive Review of Its Impact across Industries. *Global Journal of Multidisciplinary Sciences and Arts*, 1(1), 26-48.
- [31]. Valli, L. N., & Sujatha, N. (2024, April). Predictive Modeling and Decision-Making in Data Science: A Comparative Study. In *2024 5th International Conference on Recent Trends in Computer Science and Technology (ICRTCST)* (pp. 603-608). IEEE.
- [32]. Díaz, Ó., Dalton, J. A. R., & Giraldo, J. (2019). Artificial intelligence: a novel approach for drug discovery. *Trends in Pharmacological Sciences*, 40(8), 550–551.
- [33]. MEHTA, A., CHOUDHARY, V., NIAZ, M., & NWAGWU, U. (2023). Artificial Intelligence Chatbots and Sustainable Supply Chain Optimization in Manufacturing: Examining the Role of Transparency, Innovativeness, and Industry 4.0 Advancements.
- [34]. Jim, M. M. I., Hasan, M., Sultana, R., & Rahman, M. M. (2024). Machine Learning Techniques for Automated Query Optimization in Relational Databases. *International Journal of Advanced Engineering Technologies and Innovations*, 1(3), 514-529.



- [35]. Khan, R., Zainab, H., Khan, A. H., & Hussain, H. K. (2024). Advances in Predictive Modeling: The Role of Artificial Intelligence in Monitoring Blood Lactate Levels Post-Cardiac Surgery. *International Journal of Multidisciplinary Sciences and Arts*, 3(4), 140-151.
- [36]. Zainab, H., Khan, A. H., Khan, R., & Hussain, H. K. (2024). Integration of AI and Wearable Devices for Continuous Cardiac Health Monitoring. *International Journal of Multidisciplinary Sciences and Arts*, 3(4), 123-139.
- [37]. Greenberg, N., Docherty, M., Gnanapragasam, S., & Wessely, S. (2020). Managing mental health challenges faced by healthcare workers during covid-19 pandemic.
- [38]. Bmj, 368. Habermann, J. (2021). Psychological impacts of COVID-19 and preventive strategies: A review. Harrer, S., Shah, P., Antony, B., & Hu, J. (2019). Artificial intelligence for clinical trial design. *Trends in Pharmacological Sciences*, 40(8), 577–591.
- [39]. Valli, L. N., & Sujatha, N. (2024, April). Predictive Modeling and Decision-Making in Data Science: A Comparative Study. In *2024 5th International Conference on Recent Trends in Computer Science and Technology (ICRTCST)* (pp. 603-608). IEEE.
- [40]. Holzinger, A., Biemann, C., Pattichis, C. S., & Kell, D. B. (2017). What do we need to build explainable AI systems for the medical domain? ArXiv Preprint ArXiv: 1712.09923. Hummel, P., & Braun, M. (2020). Just data? Solidarity and justice in data-driven medicine. *Life Sciences, Society and Policy*, 16(1), 1–18. Lee, E. (2021). How do we build trust in machine learning models? Available at SSRN 3822437.