Global Trends in Science and Technology

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

The Convergence of Computer Science and Artificial Intelligence: Applications in Healthcare, Cybersecurity, Poultry Science, and the Transformative Role of ChatGPT

Ghaith Alomari[1*]

[1]Chicago state university, USA

[1]galomari@csu.edu

open access

Corresponding Author
Ghaith Alomari

galomari@csu.edu

Article History:
Submitted: 05-07-2025
Accepted: 14-08-2025
Published: 19-08-2025

Keywords

Artificial Intelligence, Computer Science, Healthcare, Cybersecurity, Poultry Science, ChatGPT, Conversational AI.

Global Trends in Science and Technology is licensed under a Creative Commons Attribution-Noncommercial 4.0 International (CC BY-NC 4.0).

ABSTRACT

Artificial intelligence (AI), which is based on computer science, is transforming a wide variety of industries, including healthcare, cybersecurity, agriculture, and conversational technologies. The present review discusses the benefits of AI to improve clinical decision-making, medical imaging, and personalized treatment in healthcare, as well as increasing cybersecurity by incorporating predictive threat detection and dynamic defenses. Precision farming, disease surveillance and nutrition optimization enabled by AI is used in poultry science to create a sustainable food production and promote the welfare of animals. Such a conversational AI like ChatGPT is the best example of how natural language processing can help to fill the knowledge gaps, advance the communication processes, and facilitate interdisciplinary work. Although it has an enormous potential, it still has its challenges, such as privacy of data, biases of algorithms, ethical decision-making, and equal access. The visions going forward include explainable AI, universal availabilities, and answerable human-AI cooperation.

INTRODUCTION

The blistering development of computer science and artificial intelligence (AI) has changed almost every corner of the human activity, be it scientific research or everyday life. In the last 20 years, AI has evolved out of more of a developmental stage into a viable technology shaping the industries, creating new workflows, and affecting the maintenance of the world economy. One of its greatest contributions can be seen in integrating AI in several key areas like healthcare, cybersecurity and farming to name a few and even within certain disciplines of specialized fields like poultry science

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

[1]. All these fields have their specific issues, disease diagnosis, digital security threats, even the sustainable management of livestock, to mention a few, are serious problems that need to be solved intelligently through the use of data. Here, AI has not only increased efficiencies and accuracies, but also changed paradigms of problems being solved which were not imaginable [2].

Healthcare has been on the front line using AI as a result of its capabilities to boost patient outcomes and improve the pace of medical studies and eliminate diagnostic errors. As clinical data are growing exponentially, the conventional means of healthcare decision-making are proving inadequate. Machine learning algorithms and natural language processing power AI to enable clinicians to perform precision medicine, predictive analytics, and even aid them with robotic help in surgery [3]. Yet, healthcare AI is a two-faced coin: the concerns of patient privacy, AI algorithm transparency, and the lack of regulating oversight are still burning issues. This dilemma of the capacity of technology and ethical responsibility is part of the major discussion concerning AI in medicine [4].

Simultaneously, cybersecurity has become one of the major areas of AI application. Due to the fast pace of digital transformation, there has been a sudden rise in the sophistication of cyber attacks, compromising the safety of individuals, corporations, and in some cases national security as well. Conventional rule-based security devices fail to keep abreast with the dynamic threats, like zero-day attacks and advanced persistent threats, etc. More rapid and flexible responses can be achieved using AIPowered cybersecurity tools via anomaly detection and predictive modelling. However, adversarial AI, the systems in which the attackers use the AI itself, introduce novel vulnerabilities [5]. Therefore, despite the role of AI in reinforcing the defense system, it also increases the scope of threats, which requires further studies and new developments in the sphere of cybersecurity.

ChatGPT and other large language models (LLMs) are a significant change in the human-AI interaction, and these will be seen as a distinctive part of this review. ChatGPT represents general-purpose intelligence in natural language communication unlike conventional AI systems that were narrow in focus [6]. It has proven to be useful in various situations: it may help a medical professional communicate with patients, train people in the sphere of cybersecurity, or help a farmer disseminate knowledge. Meanwhile, the possible danger of conversational AI, which includes misinformation, misuse, and ethical risk, must also be considered. Answering to the domains as a unifying thread ChatGPT helps to demonstrate how AI can exceed technical implementation and become a team member in its decision-making and sharing knowledge [7].

This review article strives to discuss the intersection between computer science and AI in worse or local contexts of healthcare, cybersecurity, as well as poultry science, with special focus on the role of ChatGPT as a disruptive force. This discussion highlights that AI is not only a technological

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

instrument but also the enabler of systematic changes in society by looking through its applications, challenges and perspectives in the future. The diversification of the use of AI in various aspects underscores the versatility of the concept, which demonstrates its complexity in a beneficial way to understand more of the relation between people and intelligent systems in the new era of their evolution [8].

FOUNDATIONS OF COMPUTER SCIENCE AND AI

Artificial intelligence (AI) is fundamentally based on the precepts of computer science, which is the field of study that offers the conceptual frameworks, programming concepts, and computer power to develop intelligent systems. Fundamentally, computer science is involved with address ing problems by means of algorithms, data structures, and logical computation. These pillars do not only constitute the foundation of traditional computing, but also the fast evolution of AI technologies, which change various fields [9]. Their comprehension is the key to realizing the potential of the efficient use of AI in the fields of healthcare, cybersecurity, poultry science, and the implementation of such technology as ChatGPT.

Artificial intelligence in the widest scope of meaning is the creation of systems which have the ability to carry out functions and activities that would otherwise call for human intelligence. Such tasks are reasoning, learning, perception, decision-making, and natural language understanding. Machine learning (ML), which is part of AI, focuses on algorithms that enable systems to learn and make decisions based on the data by letting them perform better with time without exceptionally programming them [10]. Supervised learning in ML allows a model to generate predictions using labeled data, whereas the unsupervised learning discovers latent structures within unlabeled data. Another critical technique is reinforcement learning, which replaces the fixed rules of decision-making with rewards of desirable outcomes taught to agents in a sequence of decision-making decisions [11].

Although the technological foundations of AI are stunning, computer science is also core to achieving technologically driven improvements with regards the ethical and social impact of intelligent systems. The problems of fairness, accountability, transparency and bias are not only societal problems, but also are computational problems which demand rigorous solutions [12]. As an illustration, the development of robust and ethical AI requires the design of algorithms that will ensure that AI in the healthcare field will not strengthen diagnostic bias, nor will the AI tools in cybersecurity undermine privacy unintentionally. On the same note and in meanings such as in agricultural fields such as poultry science, AI should be able to strike a balance between productivity, sustainability and animal welfare. These considerations show that computer science can use more than just mathematics and

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

engineering in its foundations, and that values, governance and responsible innovation [13] are important.

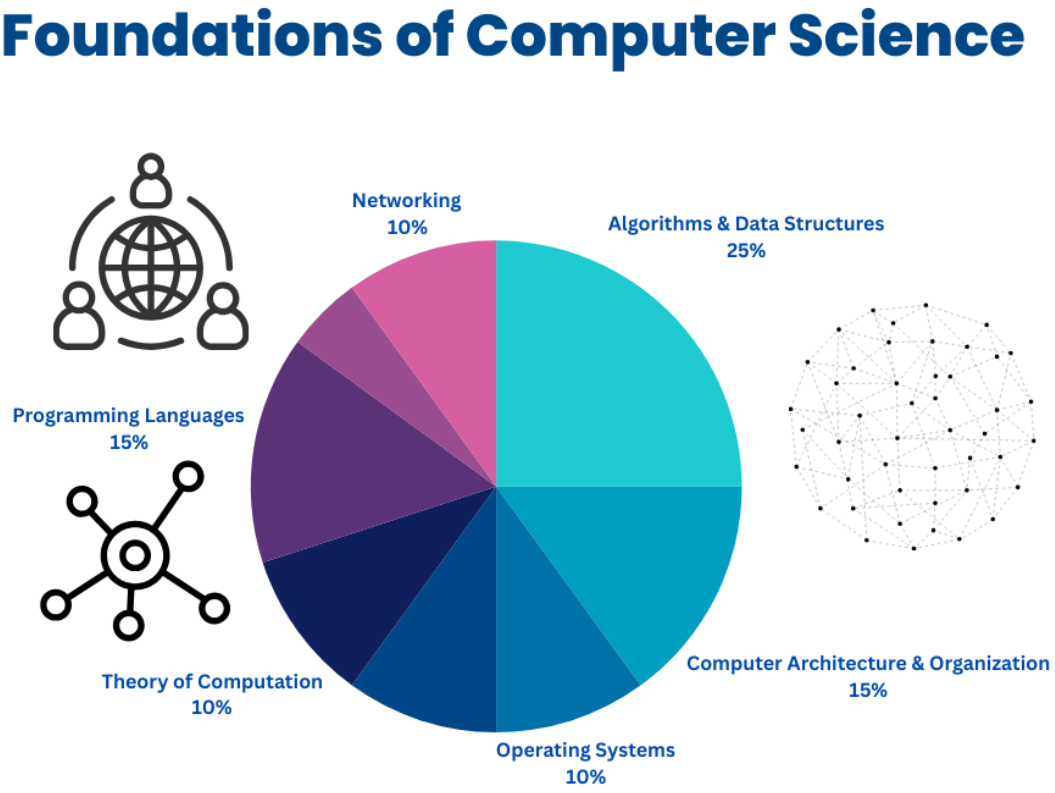


Figure: 1 showing foundations of computer science

Computer science offers the bridge on which AI can be integrated with others. Its open, modular, scalable and interoperable systems allow interworking across domains. Be that as it may, whether it is a development of AI-driven diagnostic tools, smart security systems, or intelligent poultry surveillance systems, computer science would allow adjustment of AI to suit the purpose of various fields [14]. Chatter bots such as ChatGPT are the seeds of such infusions well illustrated using the fact that these large language models act as general-purpose platforms that may be adapted to many contexts, including health communication or agricultural extension services.

ARTIFICIAL INTELLIGENCE IN HEALTHCARE

The sphere of medical care has become one of the most actively developing and promising areas to implement artificial intelligence (AI). The growing complexity of medical data and the mounting cost of care in addition to the pressing precision medicine necessities has presented a fertile breeding ground with respect to AI innovations. AI is transforming their ability to diagnose, treat, and manage their patients by using machine learning algorithms, natural language processing (NLP) and deep learning. More than being applied to the clinical practice, the use of AI in medical research, hospital practices, and patient interactions is also being changed. However, in all its potential, healthcare AI

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

is under-going obstacles that include data privacy, algorithm bias, regulatory acceptance, and ethical responsibility [15].

Clinical decision support systems (CDSS) developed and designed with the help of AI are one of the greatest contributions of AI to healthcare. They are computer systems that employ AI to interpret information about patients, provide a diagnosis and treatment plan. To illustrate, AI-enabled technologies can be used to search through the electronic health records (EHRs) to identify patterns correlating with chronic disease or potentially dangerous drug interactions. These systems can help physicians by giving evidence-based tips, decreasing diagnostic inaccuracies, and facilitating individualized health [16]. In emergency conditions, AI is able to quickly process vitals and imaging data of a patient to enable a quicker triage response.

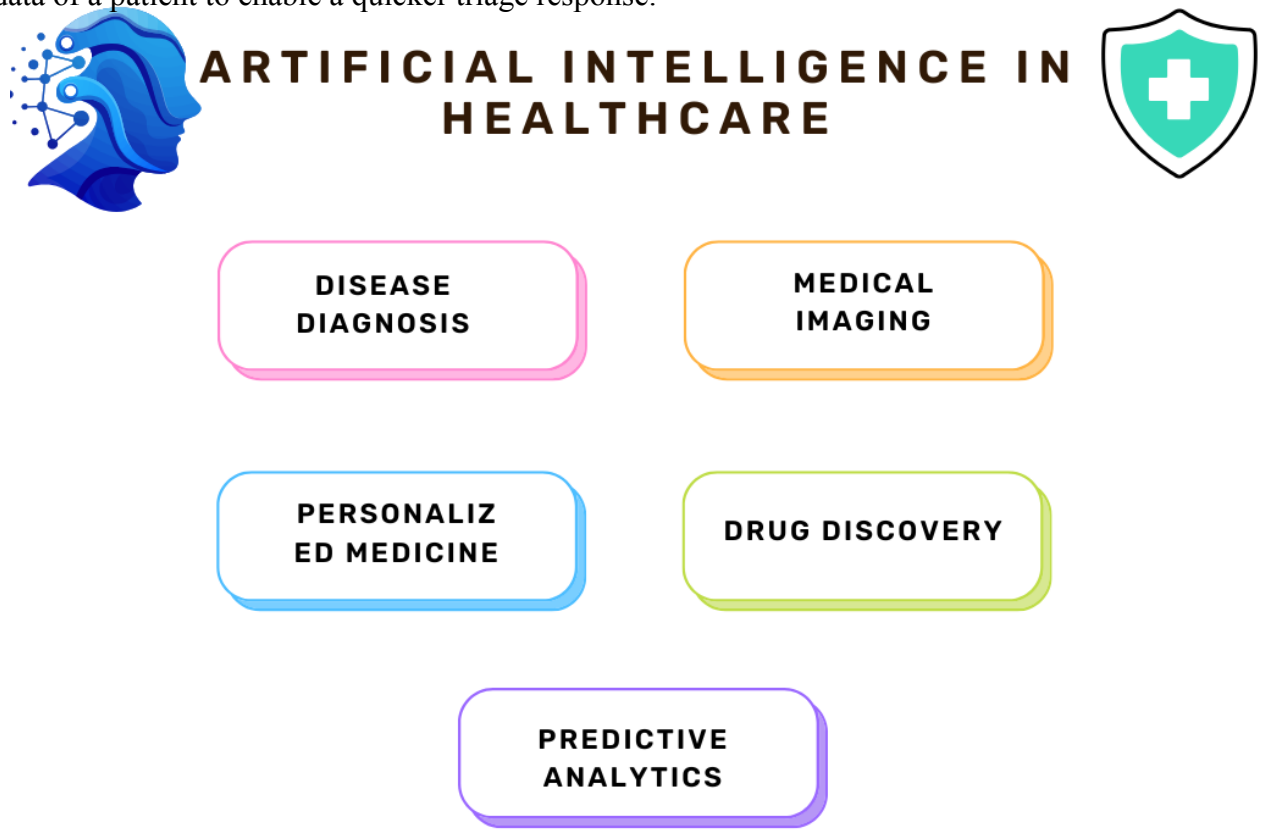


Figure: 2 showing Ai role in healthcare

AI has been a success in medical imaging. Using deep learning models, trained with millions of X-rays, CT scans, and MRIs, an anomaly--tumor, fracture, or neurological disorder, is detected with extraordinary levels of accuracy. In certain respects, the efficiency of the AI systems is comparable to the one provided by the radiologists or even better [17]. As an example, AI models have an increase in diagnosing early-stage cancers, the advancement of cancer, and organ functioning. These tools can both increase diagnostic precision but also relieve the health professionals of demands as they can spend time on more complex diagnosing decision-making rather than investigating routine images

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

[18].

Research in engineering and science applications spans robotics, fluid dynamics, control systems, vibrations, and environmental engineering all of which provide a rich field upon which artificial intelligence (AI) may be applied. Advances like planar anthropomorphic manipulators and ball and beam balancing structures in robotics show us that this area of study can be enhanced by the flexibility of AI-enabled computational modelling and control [19]. Within the context of fluid dynamics, AI has been used to optimize the computational modeling and mesh optimization process, as well as the efficient use of resources that results in faster, and more accurate, simulations through predictive analytics [20]. Investigations in vibrations and in-vata analysis also show how AI finds use in pattern recognition, anomaly detection, and more automated interpretation of complicated data sets.

In environmental engineering, likewise, AI facilitates predictive monitoring (and adaptive management) in general, and sewage treatment process optimization and mitigation of high BOD levels, specifically [21]. These applications have very close similarities with the application of AI in healthcare where techniques of predictive modeling, anomaly detection, and optimization are also used in early diagnosis of diseases, individually tailored treatment plans, and on-going patient monitoring [22]. Together, these similarities portend the disruptive power of AI as a convergent technology that augments efficiency, accuracy, and innovation not only in engineering systems but also in healthcare [23].

Looking to the future, the potential of AI in healthcare will keep expanding towards its increased allocations and personalization's. The importance of explainable AI (XAI) is increasing, with clinicians and end users (patients) needing to understand the process of arriving at decisions using an AI. Next-generation precision medicine breakthroughs are predicted based on multimodal AI, which can train on many varied data types (text, image, and genomic sequence) at once [24]. The future of healthcare delivery will probably emerge to be collaborative AI systems wherein medical professionals and machines collaborate. When used ethically, AI could enhance efficiency and accuracy as well as render healthcare more accessible, equitable and patient-centric [25].

AI TO CYBERSECURITY

Cybersecurity is now an essential part of the contemporary society because digitalization spreads over industries, governments, and individual living. The suite and proliferation of interconnected devices and the cloud and large IT infrastructures have provided enormous digital ecosystems that are at risk to more and advanced cyber-attacks. The older forms of rule-based security practices no longer apply to the new forms of threats including zero-day attacks, phishing, and advanced persistent threat (APT) amongst others. Artificial intelligence (AI), in this regard, has been recognized as an effective partner

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

that helps organizations to predict, detect, and respond to cyber threats in a dramatic manner never observed before. Nevertheless, along with enhancing the defenses, AI also poses new issues such as adversarial exploitation and ethical dilemma [26].

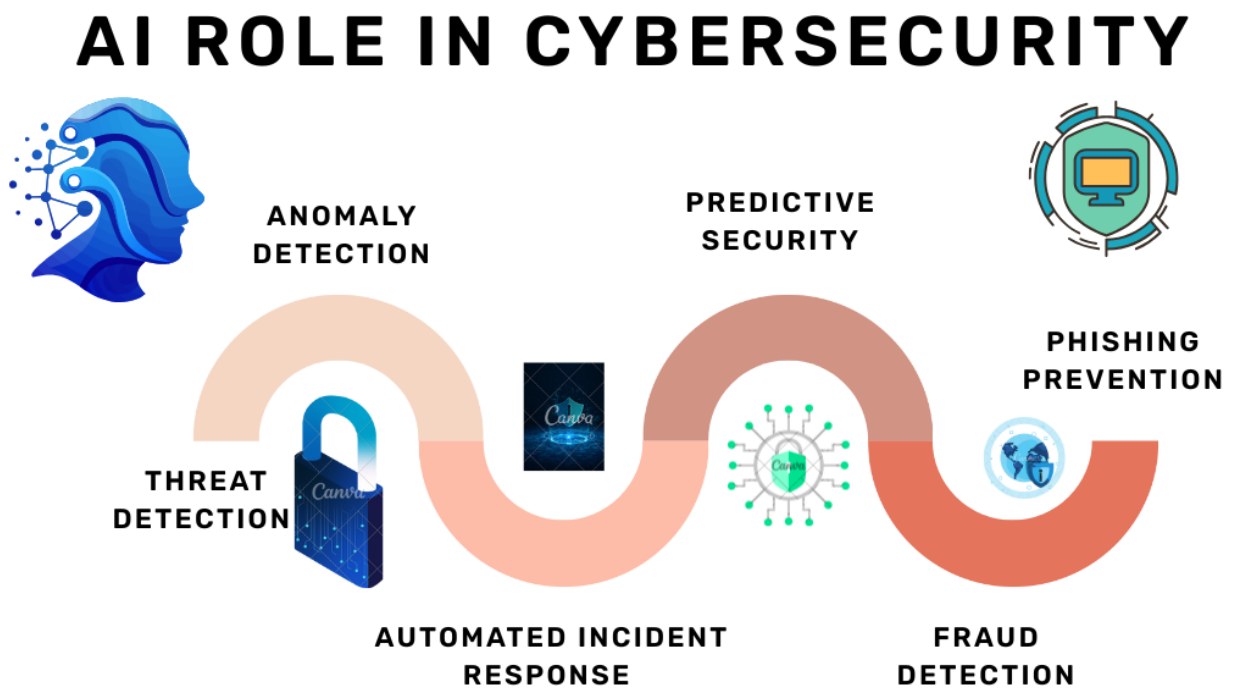


Figure: 3 showing AI role in the cybersecurity

Real-time analysis of large amounts of data is one of the most successful applications of AI-powered systems, partially because they can help identify anomalies that may be relevant to possible malicious activity. Machine learning algorithms are able to create baselines of normal behavior at the networks, and indicate any deviations that could be the indication of intrusions. As an example, artificial intelligence (AI) based intrusion detection systems (IDS) are capable of detecting improper logins, dubious data transfers or malware signatures that bypass old-fashioned firewalls. Designs like these are dynamic in such a way that they learn and evolve with new patterns of attacks so as to ensure better accuracy over time compared to straight rule-based methods [27]. Such flexibility plays an important role when it comes to protecting against the dynamic strategies of cybercriminals.

Nevertheless, nothing in this world is free of limits, and the adoption of AI in cybersecurity is not an exception. A significant issue which has been raised is the so-called adversarial AI, in which adversarial agents willingly train machine learning systems so that they can avoid detection or cause false alarms. E.g. it may take the form of carefully designed malicious code that is not recognized as malicious by an AI classifier and gets past defenses. Moreover, the effectiveness of an AI system is not more robust than the quality of the training data [28]. The possibility of over-reliance on AI poses

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

a threat as well, making organizations unable to put human expertise into the equation, as it is still essential to interpret the context and make ethical decisions.

Moving forward, it is likely that the incorporation of AI in cybersecurity will keep on increasing, and eventually, the concept of self-learning, and autonomous security systems will surface. Such systems might autonomously perform with little to no human interaction, and adapt to the changing threats in distributed networks, cloud based infrastructures, and the Internet of Things (IoT). Future improvements in explainable AI (XAI) promise to assist in closing the gap between fully-automated decisions and manual control to improve trust and accountability [29]. Cross-domain applications, e.g., cybersecurity awareness training and phishing – through the lens of conversational AI like ChatGPT, will expand the role of AI that was previously limited to technical means of defence into educational and prevention tools [30].

The use of AI has given cybersecurity an adaptive and predictive nature instead of the reactive science. Even when difficulties, including adversarial AI, ethics and so forth linger, the use of intelligent systems promises to provide the best prospect towards ensuring digital infrastructures in a more interconnected world. Maintaining a balance between machine-based automation through sophisticated artificial intelligence and intelligent control of human beings is likely to become the future of cybersecurity [31].

POULTRY SCIENCE AND AI

Farming poultry is an important way of maintaining food security in the world with a significant source of cheap protein in the form of eggs and meat. As the global population increases and demand of animal protein increases, poultry production is challenged with disease control, nutritional manipulation of nutrients in feed, sustainable environmental practices, and animal welfare. Conventionally, poultry farming procedures have involved manual observation and periodic vet checks, which are usually unsophisticated, high-error and have limited capabilities [32]. Artificial intelligence (AI) incorporated into poultry science is reshaping this field and offers precision farming at the data-driven level of prescriptions and automation. Thanks to computer vision, predictive analytics, and Internet of Things (IoT), AI can provide a path toward more sustainable, more resilient, and more efficient poultry production [33].

The smart working of precision farming relying on IoT sensors and smart devices that monitor conditions in poultry houses continuously is also in its AI-driven approach. Heater, air quality, humidity, lighting are the parameters that can be optimized with AI algorithm in order to keep ideal conditions of poultry health and productivity. Real-time sensors are conducted by machine learning models to the ability to automatically augment ventilation, feeding, and water policies. This reduces

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

wasteful use of resources and maximizes on bird welfare and production efficiency [34]. Through automation of routine monitoring, AI decreases the requirements of round the clock human observation and allows the large-scale farms to work more efficiently.

One of the biggest risks to poultry farming involves outbreaks of diseases, which can drain a company and destabilize food supplies, leading to huge economic losses. AI can be used as a significant means to detect and prevent diseases at an early stage. As an example, computer vision systems may be trained to learn to recognize images and videos of poultry flocks and find evidence of illness like decreased patrolling, unusual posture of animals or changes in feeding system. Likewise, sound recognition algorithms are capable of detecting respiratory complications on the basis of alterations to vocal patterns. Disease risks allow preventative action to be taken before problems have exacerbated by harnessing predictive models that have been trained on the past outbreak data. These promote the health of flock and minimise the use of antibiotics, which is in vogue with the global policies to fight resistance to antibiotics [35].

The highest percentage of the cost of poultry production is associated with feed, the optimization of which is the essential field of AI application. Machine learning algorithms have the ability to make use of data on feed composition, growth rates, and environmental factors, to come up with custom feeding strategies on flocks. Through optimal diets to meet the requirement of various breeds or growth stage development, AI maximizes food conversions, minimizes wastes and the overall productivity of animals is improved [36]. The number of eggs and weight gain can also be predicted using models and farmers can thus structure their activities efficiently and in a manner that they maximize on their investment.

In addition to productivity, AI is becoming a prominent way of focusing on sustainability and ethical questions in chicken farming. Accuracy monitoring minimizes their impact on the environment because it streamlines the utilization of resources and lowers wastes emissions. AI systems also promoted good welfare in the sense that, birds are able to live in comfortable and stress free conditions. As an example, 24-hour surveillance of flock behavior by the flock can indicate overcrowding or environmental changes that could have otherwise remained unobserved. It helps lead to more humane modes of farming, which corresponds to the wishes of consumers in regards to ethical farming that produces food [37].

One of the new aspects of AI in poultry science is conversation-based artificial intelligence systems, which can be used, like ChatGPT. Such tools will be able to give real-time advice to farmers, responding to questions concerning the health of the flock, its nutrition or biosecurity measures. ChatGPT can be a useful source of knowledge and information-exchange in developing countries,

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

where access to veterinary specialists might not be easy; thus closing the circle between the theory of scientific research and farming practice [38]. ChatGPT could be used to train farm workers through provision of learning modules on welfare and sustainability best practice and disease prevention.

Multimodal data integration using environmental, behavioral, genomic, and market data to provide integrated managements system represents the next direction of AI in poultry science. Further efficiency might be achieved by a robotics and automation technology that allows flock monitoring and even management autonomously. With the rise in consumer demand in sustainable and ethical production, AI will be critical in meeting their demands and keeping things economically viable. Nonetheless, there is still some difficulty due to the costs, technology adaptation, and training of farmers. The future of AI in poultry science will rely heavily on collaborative efforts among researchers, industry stakeholders, and policymakers in fully capitalizing on the potential [39].

The AI is reshaping poultry farming by increasing precision, efficiency, sustainability, and welfare. Whether it is identifying diseases or optimizing feed and sharing knowledge with the help of ChatGPT, AI applications will transform poultry science into a smarter, more-resilient industry. Introducing AI not only enhances the productivity of poultry industry but is also in compliance with expanded global processes that seek to achieve food security, sustainable food production and animal welfare [40].

CHATGPT AND CONVERSATIONAL AI

Artificial intelligence (AI) in conversation is one of the most unnoticeable and ground-breaking technologies in the sphere of computer science. ChatGPT, a large language model (LLM) created by OpenAI, is one of such systems, and it has become a measure of natural language understanding and generation. As opposed to legacy AI systems trained in very specific functions, ChatGPT offers a demonstrated level of versatility in various domains because it can also carry on human-like conversations, provide complex answers to questions and create content, as well as support human decision-making processes [41]. The fact that it can process natural language in real-time, adjusting to context, allows it to be useful in the fields of healthcare, cybersecurity, and agriculture, etc. Nevertheless, its increasing power is associated with the questions of misinformation, ethical applications, and estimates of the long-term consequences to society [42].

In medical field, communication is as important as medical knowledge. Medical jargon might be confusing to the patient or he/she may not be able to adhere to the instructions. ChatGPT also holds the potential to be used as a digital assistant in simplifying medical language into patient-friendly explanations as well as answering questions and intervention by offering reminders, especially on medication or lifestyle recommendations. ChatGPT can be useful to healthcare professionals to

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

summarize electronic health records, create discharge notes [43], or clinicians can use ChatGPT to get recommendations from clinical decision-making guidelines [43]. ChatGPT will help achieve greater personalization and patient engagement in care by eliminating the communication barrier between the patient and provider. ChatGPT-based applications are anticipated to be used as first-line virtual assistants in underserved regions with limited medical professionals that enhance access to necessary healthcare information [44].

Cybersecurity also lies not only in the technical barriers, but also in human awareness. A lot of these compromises are caused by phishing attacks, insecure passwords, or lousy digital health. ChatGPT can be used as an interactive training program to mimic phishing attacks, test employees on protection measures through quizes, and give instant explanations. Its dialogue interface enables the learning process by conversing with the system and therefore cybersecurity learning process becomes more interesting and effective [45]. Besides, ChatGPT has the potential to support the job of security analysts, such as parsing technical threat reports, summarizing the vulnerabilities or even writing incident response messages. As such applications help in fortifying response measures as well as prevention measures by making organizational resilience towards cyber threats stronger [46].

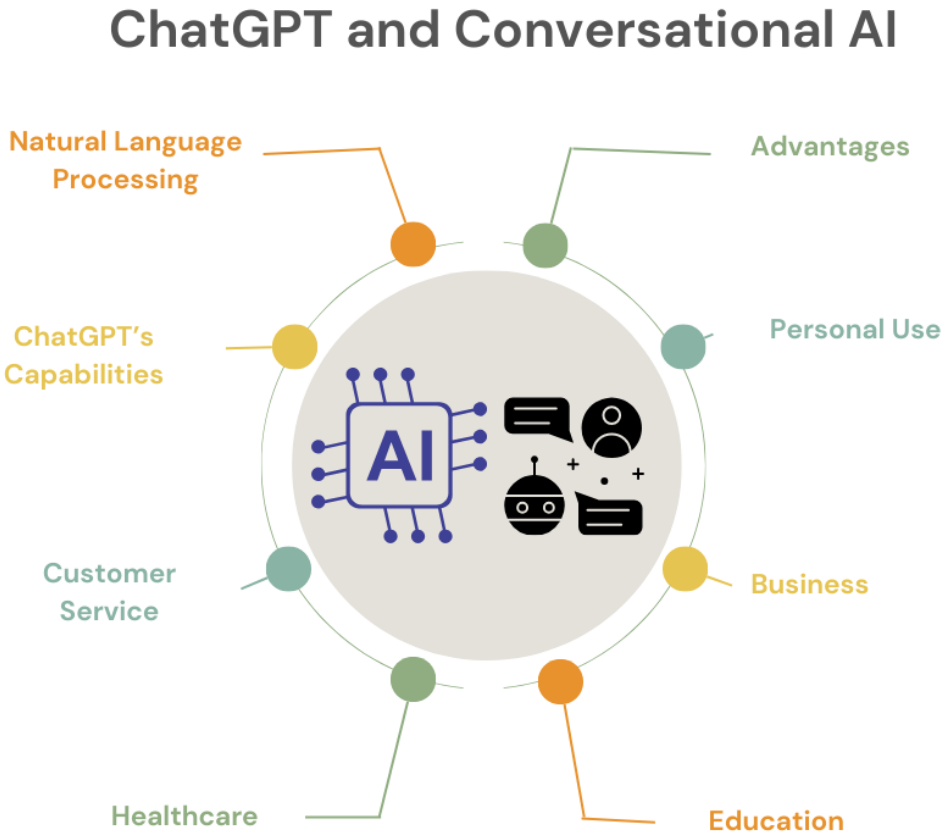


Figure: 4 showing ChatGPT and conversational AI

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

In spite of its potential, ChatGPT has its limitations. Its propensity to create what are known as hallucinations, or feasible but wrong responses, is a big issue. In critical areas like healthcare or cybersecurity, the stakes are very high in case of misinformation. ChatGPT will have to be carefully combined with verified knowledge bases and professional control when ensuring accuracy and reliability. There are also ethical issues related to privacy whereby the conversations that take place with conversational AI frequently involve the processing of confidential personal information [47]. The way to ensure that ChatGPT is trained, deployed, and monitored transparently as a way of gaining the trust of users. Also, the danger of misuse, e.g., to create phishing emails or create propaganda, makes it clear that conversational AI technologies have to be governed responsibly [48].

What lies ahead is the fact that the task of ChatGPT and other related projects will also increase greatly. Their capacity to operate across contexts will be boosted by integration with multimodal AI that is able to prepare not only text but also images, audio, and video. ChatGPT can become an advisor, a virtual assistant loved in healthcare and integrated into the clinical system or an analyst in real-time, in cybersecurity. In the farm it might assist in decision-making through integration of sensor information with expert knowledge [49]. Notably, explainable AI (XAI) progress will be essential to achieve transparency and accountable results to enable users to understand ChatGPT output generation.

ChatGPT and conversational AI can be considered the democratisation of artificial intelligence. With easy-to-use, universal, and adaptable interaction, they have the potential to revolutionize healthcare communication, improve the awareness of cybersecurity, and promote such agricultural activity as managing poultry. Nevertheless, to achieve this potential, extreme care must be exercised in terms of accuracy, ethics, and wise application so that the systems can be allies instead of unadulterated risks [50].

DOMAIN-WIDE CHALLENGES

Artificial intelligence (AI), though it employs impressive potential in the spheres of healthcare and cybersecurity, poultry science, and conversations, including the ChatGPT platform, admits that its adaptation into these areas is complex. The issues they raise are different in each sector, but still some general themes can be distinguished, such as issues of data privacy, algorithmic bias, ethical responsibility, etc., and the necessity of interdisciplinary work. Learning more about these cross-cutting issues is critical to making sure that AI technologies are used responsibly, effectively, and sustainably [51].

The sensitivity of the information in healthcare, cybersecurity, and agriculture acts as a major threat to AI systems since they flourish on data. In healthcare, private medical data are in electronic health

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

records (EHRs), genomic information, radiology data, etc. The storage and sharing of this information should be safeguarded by acts like HIPAA and GDPR. Without proper authorization or misuse of this data, it may affect the trust between patients and cause detrimental effects [52]. Equally, in cybersecurity, the AI models will also need access to network logs and user behavior data which when poorly managed may cause further vulnerabilities. The application of IoT devices and smart farming platforms produce operational data which, once it is revealed, can influence food supply chains and economic security in the sphere of poultry science. It is also important to establish effective data governance systems, encryption processes and access controls in every field [53].

The application of AI to such complex areas as healthcare or agriculture requires a partnership between the computer scientist, subject matter expert, policymakers and the end user. Nevertheless, between-discipline partnerships are characteristically flawed by experience-based distinctions, language gaps, and inappropriate target objectives. As an example, clinicians can have difficulty understanding AI-authored recommendations without clear explanations, and farmers can become unable to use AI-driven poultry management tools owing to expense or technical contrivance [54]. To fill these gaps, it is necessary to have user-friendly interfaces, explainable AI (XAI) models and education programs that will enable non-technical users to use AI systems efficiently.

The increasingly fast changes in AI technologies have surpassed the scenarios of formulating regulatory frameworks. The liability poses questions in the field of healthcare when recommendations made by AI drive harm. In cybersecurity, surveillance or automated defense that uses AI is controversial as it undermines the privacy and autonomy aspects. Issues of intense monitoring and the productivity vs animal welfare are debated in modern farming and especially in the field of poultry science [55]. When it comes to conversational AI, such as ChatGPT, misinformation, unacceptable use and content moderation will require a transparent government system. The problem that policymakers must deal with is to come up with rules that protect individuals without inhibiting innovation.

However, AI technologies are characterized by scalability, interpretability, and reliability drawbacks despite their fast evolution. Numerous models serve as so-called black boxes, and it is hard to comprehend the decision-making process, which can be of interest in such high-stakes areas as healthcare and cybersecurity. Moreover, implementation cost and lack of infrastructure are barriers to use along with resistance to change in resource limited settings [56]. As one example, poultry farmers with smallholdings may not be able to afford AI-based precision farming equipment, whereas rural health practitioners may not have the digital infrastructure to host and serve the AI-powered solution. Closing the gap of fair access to AI technologies thus becomes a global issue that needs to

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

be tackled [57].

Finally, the foundation of the usage of AI is trust. They should be sure that the AI systems are reliable, fair, transparent, and can be based on human values of stakeholders in any sphere. Development of AI should include principles of ethical design, validation, and lifelong monitoring to build up trustworthy AI. Efforts such as explainable AI, participatory design, and global standards to govern how AI is used are hopeful efforts toward building the means to ensure that AI supports and does not diminish human well-being [58].

The struggles of AI in medical, cybersecurity, poultry science, and chat-based systems such as ChatGPT go beyond the technicality to involve aspects of ethics, regulation and societal challenges. Managing these challenges requires inter-disciplinary cooperation, accountable governance and absolute dedication to openness and equity [59]. It is only when such issues are addressed that AI can deliver on its potential as an agent of change in a variety of areas.

FUTURE PERSPECTIVES

With the further development of artificial intelligence (AI), its application in the field of healthcare, cybersecurity, poultry science, and conversation systems like ChatGPT will become more significant and wider. The future brings not only technological but also societal, ethical, regulations that are needed to make the use of AI responsible [60]. The next 10 years are to be possibly marked by the unification of AI and other emerging technologies, the appearance of explainable and trustworthy AI and the increased focus on the interdisciplinary integration.

Utilizing AI as a unifying force across sectors is one of the most prominent areas in which it could be utilized in the future. Multimodal data sources (i.e., clinical records, genomic data, imaging, and wearable sensor data) are also becoming more integrated in the healthcare industry, to be used with AI to provide holistic insights towards personalized medicine [61]. The concept of integration in terms of cybersecurity will be using both AI systems and threat intelligence networks across the world to respond to cyber threats, as it will be quicker and more coordinated. This combination of AI and IoT, robotics, and biotechnology in the field of poultry science may open the door to entirely automated farms with self-adjusting strategy in production. ChatGPT and conversational AI in general will be an intermediary, enabling a flow of knowledge among experts, policymakers, and the end user, across these sectors [62].

Future generations of AI models will not only leave the single-modality models behind but adopt the multimodal and hybrid ones. These systems will be capable of consuming a wide variety of inputs (text, images, video, audio, and even sensor values) at the same time. In healthcare, this may include AI system that integrates verbal patient report of symptoms with scans and laboratory testing to

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

produce a full diagnostic recommendation [63]. Multimodal AI in the field of cybersecurity would be in a position to analyze textual phishing attacks and unusual login patterns in order to detect advanced social engineering attacks. Applications to poultry farming Hybrid models may use environmental sensor data, combined with video cameras that monitor in real time to predict disease outbreaks or welfare problems with higher accuracy. Such innovations will cause a drastic rise in the range and precision of AI applications [64].

The need to understand explain ability will increase as more decisions critical to operations become increasingly embedded in AI. Stakeholder's doctors, farmers, those analysts specializing in cybersecurity, among others, must know not only what decisions an AI system is making but also why it makes them. Explainable AI (XAI) is on the path of becoming a key pillar in future development that guarantees transparency, accountability, and trust. Along with the explain ability, future AI governance structures will be steered by considerations of fairness and privacy, and inclusivity. To obtain universal implementation, establish reliable AI will have to be the way to minimize the threat of abuse [65].

Innovation, integration, explain ability, collaboration and inclusivity will form the future of AI in the field of healthcare, cybersecurity, poultry science and conversational systems such as ChatGPT. In as much as the technological development would widen the opportunities, responsible governance, ethical safeguarding, and the reach of AI to the world determine to what extents it will be able to live up to its expectancy of being an avenue of change in humanity [66].

CONCLUSION

Combining the technology of computer science, artificial intelligence (AI), in the context of healthcare, cybersecurity, poultry science, and chatting platforms, such as ChatGPT, one can remember the revolutionary power of the intelligent technologies in solving the sophisticated issues of the world. The realm of each of these areas reflects both the potential of AI to enhance efficiency, precision, and judgments as well as the subtle challenges of domesticating the most advanced algorithms to practice. Helping clinicians with diagnosis tools to strengthening online protections, streamlining poultry farming processes and open knowledge with conversational AI, AI has been shown to be versatile and powerful. The scope of its reach nevertheless also demonstrates an acute lack of effective governance, ethical protection and cross-disciplinary cooperation.

In healthcare, AI has been demonstrated to have massive potential in clinical decision support, medical imaging, personalized medicine, and patient engagement. AI helps in ensuring positive health outcomes by making it possible to detect the disease early enough and enhancing the communication between patients and providers. But data privacy, bias in algorithms and regulation are a reminder

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

that technological advances should be accompanied by serious considerations of ethics. The pressure is too big and quite possibly the future experience of AI in healthcare will rely on the ability to reach a compromise between novelty and dubiousness of patients.

Cybersecurity: AI has enabled organizations to manage their defense systems in a more predictive manner rather than a reactive approach in the case of cybersecurity, and organizations have been using AI to proactively find anomalies and even predict threats and react to incidents more quickly than ever before. The malleability of AI systems allows them to keep up with the changing tactics of attackers but adversarial AI and abuse represent major problems. With the further dependence of society on digital infrastructures, it will be vital to develop a reach of resilient, explainable, and trusted cybersecurity systems.

Research on AI in percussive farming, disease surveillance and nutritional optimization represents applications used to improve the ways in which the food security and sustainability of animals in the poultry industry is managed. AI, in terms of efficiency, and simultaneously leads to animal welfare and reduction of resources utilization. Incorporating conversational AI, including ChatGPT, continues to enhance the experience and benefits even further, given that it offers farmers accessible knowledge and training. Nevertheless, the issue of financial, adoption, and tech literacy barriers should be dealt with to provide everyone fair access especially in developing areas.

ChatGPT and conversational Artificial Intelligence tools are a different kind of approach to interaction with machines. The convenience of communication and real-time support as well as contextual adaptation make them the indispensable tools in healthcare, cyber security and in the agricultural domain as well. However, the misinformation, inappropriate usage, and ethical issues increase the necessity of implementing these systems in a transparent and monitored way. With the further development of the conversational AI, it will increasingly become an interactive partner in decision-making and knowledge dispersion, as long as it is used in a responsible manner.

In all these areas, there are common issues to be tackled: the need to protect the privacy of data, to avoid bias, to establish fairness and to surmount the hurdles to cross-disciplinary collaboration. Explainable AI development and putting in place robust regulatory systems will play key roles in surmounting these challenges. Simultaneously, the strategies to increase worldwide accessibility and affordability will make the benefits of AI no longer reflected in the sphere of technologically advanced societies only but spread with equal frequency in world society.

In the future, AI is again going to be transformed or redefined with the convergence of emerging technologies like quantum computing, block chain and robotics. Nevertheless, the real test of success is neither in technological advances but in the capacity of AI to support human necessity as well as

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

ethical principles and trust in the society. Artificial intelligence is an innovative source in the fields of healthcare, computer security, poultry research, and consummation erfavors such as ChatGPT. It will major on its future direction based on the effectiveness of the stakeholders in addressing the issues related to governance, ethics, and inclusivity. Through building trust, collaboration, responsible innovation, AI can move beyond the technical success to open the path to global advancement, resilience, and sustainable growth.

REFERENCES

[1]. Abbasi N, Nizamullah FN, Zeb S, Fahad M, Qayyum MU. Machine learning models for predicting susceptibility to infectious diseases based on microbiome profiles. Journal of Knowledge Learning and Science Technology ISSN: 2959-6386 (online). 2024 Aug 25; 3(4):35-47.

[2]. Neoaz N, Amin MH. Advanced AI Paradigms in Mental Health: An In-depth Exploration of Detection, Therapy, and Computational Efficacy. Global Insights in Artificial Intelligence and Computing. 2025 Jan 25;1(1):40-6.

[3]. Kabeer MM. Leveraging AI for Process Optimization: The Future of Quality Assurance in Lean Six Sigma. American Journal of Artificial Intelligence and Computing. 2025 May 7;1(1):87-103.

[4]. Nizamullah F, Fahad M, Abbasi N, Qayyum MU, Zeb S. Ethical and legal challenges in AI-driven healthcare: patient privacy, data security, legal framework, and compliance. Int. J. Innov. Res. Sci. Eng. Technol. 2024;13:15216-23.

[5]. Zeb S, Lodhi SK. AI for predictive maintenance: Reducing downtime and enhancing efficiency. Enrichment: Journal of Multidisciplinary Research and Development. 2025 May 13;3(1):135-50.

[6]. Zeb S, Lodhi SK. AI and Cybersecurity in Smart Manufacturing: Protecting Industrial Systems. American Journal of Artificial Intelligence and Computing. 2025 Apr 7;1(1):1-23.

[7]. Javeedullah M. Integrating Health Informatics Into Modern Healthcare Systems: A Comprehensive Review. Global Journal of Universal Studies.;2(1):1-21.

[8]. Shehzad K, Munir A, Ali U. Modern Trends in Food Production: the Role of AI in Smart Food Factories. Global Journal of Emerging AI and Computing.;1(2):1-30.

[9]. Javeedullah M. Role of Health Informatics in Public Health Surveillance and Response. American Journal of Artificial Intelligence and Computing. 2025 Apr 21;1(1):70-86.

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

[10]. Neoaz N, Shah HH, Zainab H. AI in Personalized Medicine: Transforming Treatment Plans through Precision Health. Global Journal of Emerging AI and Computing. 2025 Jan 23;1(1):34-50.

[11]. Javeedullah M. Using Health Informatics to Streamline Healthcare Operations. American Journal of Artificial Intelligence and Computing. 2025 Apr 7;1(1):24-44.

[12]. Samad A. ANTIBIOTICS RESISTANCE IN POULTRY AND ITS SOLUTION. Devotion: Journal of Research & Community Service. 2022 Aug 1;3(10).

[13]. Shihab SR, Sultana N, Samad A. Revisiting the use of ChatGPT in business and educational fields: Possibilities and challenges. BULLET: Jurnal Multidisiplin Ilmu. 2023;2(3):534-45.

[14]. Samad A. Use of poultry manure as an alternative of soybean in fish feed. Biological Times. 2023;2(3):1-2.

[15]. Ryman-Tubb, N. F., Krause, P., & Garn, W. (2018). How Artificial Intelligence and machine learning research impacts payment card fraud detection: A survey and industry benchmark. Engineering Applications of Artificial Intelligence, 76, 130-157. https://doi.org/10.1016/j.engappai.2018.07.008

[16]. Singh, A., & Gupta, B. B. (2022). Distributed denial-of-service (DDoS) attacks and defense mechanisms in various web-enabled computing platforms: issues, challenges, and future research directions. International Journal on Semantic Web and Information Systems (IJSWIS), 18(1), 1-43. https://doi.org/10.4018/IJSWIS.297143

[17]. Shehzad K, Ali U, Munir A. Computer vision for food quality assessment: Advances and challenges. Available at SSRN 5196776. 2025.

[18]. Singh A. Evolution of Computer Science: A Historical and Technological Overview. American Journal of Artificial Intelligence and Computing. 2025 Jul 23; 1(2):62-86.

[19]. Asif SM. Analysis of Key Parameters and Mesh Optimization in Computational Fluid Dynamics Using Open FOAM. BULLET: Jurnal Multidisiplin Ilmu.; 1(2):592455.

[20]. Asif SM. Design and Control of a Ball and Beam Balancing Mechanism Using MATLAB/Simulink. Global Journal of Multidisciplinary Sciences and Arts. 1(2):1-34.

[21]. Asif SM. Investigation of Elementary Vibrations: Derivation, Experimental Analysis, and Key Findings. BULLET: Jurnal Multidisiplin Ilmu.; 3(6):744-53.

[22]. Asif SM. Mitigation of High BOD Levels in Sewage Treatment Plants Using Outfall Storage Solutions. International Journal of Social, Humanities and Life Sciences. 1(1):48-61.

[23]. Asif SM. Simulation of a Two Link Planar Anthropomorphic Manipulator. BULLET: Jurnal Multidisiplin Ilmu.; 1(03):539-52.

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

[24]. Abid N, Neoaz N, Amin MH. AI-Driven Approaches to Overcoming Tumor Heterogeneity in Breast Cancer: Modelling Resistance and Therapy Outcomes. Global Journal of Universal Studies.;1(2):591050.

[25]. Abbasi N, Nizamullah FN, Zeb S. Ai in healthcare: Using cutting-edge technologies to revolutionize vaccine development and distribution. JURIHUM: Jurnal Inovasi dan Humaniora. 2023 Jun 14; 1(1):17-29.

[26]. Alowais SA, Alghamdi SS, Alsuhebany N, Alqahtani T, Alshaya AI, Almohareb SN, Aldairem A, Alrashed M, Bin Saleh K, Badreldin HA, Al Yami MS. Revolutionizing healthcare: the role of artificial intelligence in clinical practice. BMC medical education. 2023 Sep 22;23(1):689.

[27]. Bacha A. Artificial Intelligence in Healthcare, Cybersecurity, Machine Learning, and Food Processing: A Cross-Industry Review. American Journal of Artificial Intelligence and Computing. 2025 Jul 24;1(2):87-104.

[28]. Abbasi N, Nizamullah FN, Zeb S. AI in healthcare: integrating advanced technologies with traditional practices for enhanced patient care. BULLET: Jurnal Multidisiplin Ilmu. 2023 Jun 13;2(3):546-6.

[29]. Hamza M, Samad A, Ahmer A, Tariq S, Muazzam A, Ali HU, Khera AR, Hussain K, Abbas A, Raza MA, Waqas MU. Infectious bursal disease in poultry with an improved diagnostic method; brief overview. J Nat Appl Sci Pak. 2022;4:912-25.

[30]. Ahmad B, Samad A, Hamza M. Antibiotic Resistance in Poultry and farm Animals and its Solution. Biological Times. 2023;2(3):3-4.

[31]. Kabeer MM. Next-Generation Food Manufacturing: AI as a Catalyst for Productivity and Quality Enhancement. Global Food Research. 2025 Jul 15;1(1):1-8.

[32]. Shehzad K, Ali U, Munir A. Role of AI in Food Production and Preservation. Global Insights in Artificial Intelligence and Computing. 2025 Feb 19;1(2):1-7.

[33]. Lodhi SK, Zeb S. Ai-Driven Robotics and Automation: The Evolution of Human-Machine Collaboration. Journal of World Science. 2025 May 13;4(4):422-37.

[34]. Mateos-Garcia, J. C. (2018). The complex economics of artificial intelligence. Available at SSRN 3294552. https://doi.org/http://dx.doi.org/10.2139/ssrn.3294552

[35]. Neoaz N. Big Data Analytics Study the implications of big data analytics on decision-making processes in organizations. Author Nahid Neoaz. 2025 Jan 20.

[36]. Javeedullah M. Security and Privacy in Health Informatics: Safeguarding Patient Data in A Digital World. AlgoVista: Journal of AI and Computer Science.;2(3):52-68.

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

[37]. Neoaz N. Human Factors in Information Assurance: A Review of Behavioral and Cultural Aspects. International Journal of Multidisciplinary Sciences and Arts. 2024;3(4):235-42.

[38]. Shokri, R., & Shmatikov, V. (2015). Privacy-preserving deep learning. Proceedings of the 22nd ACM SIGSAC conference on computer and communications security,

[39]. Neoaz N, Amin MH. Advanced AI Paradigms in Mental Health: An In-depth Exploration of Detection, Therapy, and Computational Efficacy. Global Insights in Artificial Intelligence and Computing. 2025 Jan 25;1(1):40-6.

[40]. Bacha A. Healing with Algorithms: The Future of AI-Driven Diagnostics and Treatment. American Journal of Artificial Intelligence and Computing. 2025 May 9;1(1):103-18.

[41]. Bacha A, Shah HH, Abid N. The Role of Artificial Intelligence in Early Disease Detection: Current Applications and Future Prospects. Global Journal of Emerging AI and Computing. 2025 Jan 20;1(1):1-4.

[42]. Khan M, Sherani AM, Bacha A. The Neurological Nexus: Exploring EEG, Facial Recognition, and Graph Algorithms in Mental Health AI. Global Insights in Artificial Intelligence and Computing. 2025 Jan 26;1(1):47-56.

[43]. Lee, J., Kim, J., Kim, I., & Han, K. (2019). Cyber threat detection based on artificial neural networks using event profiles. Ieee Access, 7, 165607-165626

[44]. Mahjabin, T., Xiao, Y., Sun, G., & Jiang, W. (2017). A survey of distributed denial-of-service attack, prevention, and mitigation techniques. International Journal of Distributed Sensor Networks, 13(12), 1550147717741463. https://doi.org/https://doi.org/10.1177/155014771774

[45]. Marres, N. (2012). On some uses and abuses of topology in the social analysis of technology (or the problem with smart meters). Theory, Culture & Society, 29(4-5), 288-310. https://doi.org/https://doi.org/10.1177/0263276412454460

[46]. Bacha A, Shah HH. AI-Enhanced Liquid Biopsy: Advancements in Early Detection and Monitoring of Cancer through Blood-based Markers. Global Journal of Universal Studies.;1(2):68-86.

[47]. Neoaz N. Role of Artificial Intelligence in Enhancing Information Assurance. BULLET: Jurnal Multidisiplin Ilmu. 2024;3(5):749-58.

[48]. Samad A, Jamal A. Transformative Applications of ChatGPT: A Comprehensive Review of Its Impact across Industries. Global Journal of Multidisciplinary Sciences and Arts. 2024;1(1):26-48.

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

[49]. Martin, K. (2019). Ethical implications and accountability of algorithms. Journal of business ethics, 160(4), 835-850. https://doi.org/https://doi.org/10.1007/s10551-018-3921-3

[50]. Patel H, Samad A, Hamza M, Muazzam A, Harahap MK. Role of artificial intelligence in livestock and poultry farming. Sinkron: jurnal dan penelitian teknik informatika. 2022 Oct 7; 6(4):2425-9.

[51]. Shinde R, Patil S, Kotecha K, Potdar V, Selvachandran G, Abraham A. Securing AI-based healthcare systems using blockchain technology: A state-of-the-art systematic literature review and future research directions. Transactions on Emerging Telecommunications Technologies. 2024 Jan;35(1):e4884.

[52]. Samad A, Jamal A. Alternative Meats–Revolutionizing the Future of Sustainable Food Systems. Global Journal of Agricultural and Biological Sciences. 2024 Nov 20;1(1):1-4.

[53]. Shah HH, Bacha A. Leveraging AI and Machine Learning to Predict and Prevent Sudden Cardiac Arrest in High-Risk Populations. Global Journal of Universal Studies.;1(2):87-107.

[54]. Neoaz N, Shah HH, Zainab H. AI in Personalized Medicine: Transforming Treatment Plans through Precision Health. Global Journal of Emerging AI and Computing. 2025 Jan 23; 1(1):34-50.

[55]. Mhlanga, D. (2021). Financial inclusion in emerging economies: The application of machine learning and artificial intelligence in credit risk assessment. International journal of financial studies, 9(3), 39. https://doi.org/10.3390/ijfs9030039

[56]. Shehzad K, Munir A, Ali U. AI-Powered Food Contaminant Detection: A Review of Machine Learning Approaches. Global Journal of Computer Sciences and Artificial Intelligence.;1(2):1-22.s

[57]. Sinno, S., Negri, F., & Goldhammer, S. (2017). Designing an adaptive security architecture with unisys stealth and logrhythm. White Paper, Unisys Corporation, USA

[58]. Šrndić, N., & Laskov, P. (2014). Practical evasion of a learning-based classifier: A case study. 2014 IEEE symposium on security and privacy,

[59]. Truong, N. B., Sun, K., Lee, G. M., & Guo, Y. (2019). Gdpr-compliant personal data management: A blockchain-based solution. IEEE Transactions on Information Forensics and Security, 15, 1746-1761.

[60]. Ucci, D., Aniello, L., & Baldoni, R. (2019). Survey of machine learning techniques for malware analysis. Computers & Security, 81, 123-147. https://doi.org/https://doi.org/10.1016/j.cose.2018.11.001

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

ISSN : 3079-5761
Volume 1, Number 3, 2025
https://doi.org/10.70445/gtst.1.3.2025.198-219

[61]. Urbinati, A., Chiaroni, D., Chiesa, V., & Frattini, F. (2020). The role of digital technologies in open innovation processes: an exploratory multiple case study analysis. R&d Management, 50(1), 136-160. https://doi.org/https://doi.org/10.1111/radm.12313

[62]. Bacha A. Unveiling Frontiers: Hybrid Algorithmic Frameworks for AI-Driven Mental Health Interventions. AlgoVista: Journal of AI and Computer Science. 2025;2(1):1-8.

[63]. Bacha A, Zainab H. AI for Remote Patient Monitoring: Enabling Continuous Healthcare outside the Hospital. Global Journal of Computer Sciences and Artificial Intelligence. 2025 Jan 23; 1(1):1-6.

[64]. Zeb S, Nizamullah FN, Abbasi N, Qayyum MU. Transforming Healthcare: Artificial Intelligence's Place in Contemporary Medicine. BULLET: Jurnal Multidisiplin Ilmu. 2024; 3(4):592385.

[65]. Radford, A., Narasimhan, K., Salimans, T., & Sutskever, I. (2018). Improving language understanding by generative pre-training.

[66]. Howell MD, Corrado GS, DeSalvo KB. Three epochs of artificial intelligence in health care. Jama. 2024 Jan 16; 331(3):242-4.

This is an Creative Commons License This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.