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| 2       | Dr. N LAXMI         | The role of Artificial Intelligence in Cyber Security  | J Electrical systems  | 5283-5291                             | 2023-24 |
| 3       | Dr. S Lavanya       | Effects of hall current and rotation, heat generation on MHD free convection heat and mass transfer flow past an accelerated vertical plate            | Journal of Computational Analysis and Applications                            | VOL. 31, NO. 4, 2023<br>775-789       | 2023-24 |
| 4       | Dr. N LAXMI         | Impact of Industry 4.0 on Employment and opportunities for sustainability  | Educational Administration theory and Practice                                | 4515-4518                             | 2023-24 |
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# Healthcare Record sharing and management using Blockchain

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**Abstract---**We experience various health problems due to the hectic pace of life, which includes daily hustle and work life, and the deteriorating ecosystem. There are numerous health records produced and every individual has to maintain these many important pieces of private information. Health records are extremely sensitive information that must typically be shared with peers for numerous examinations in the medical field. Healthcare records are managed manually in the current scenario, which raises efficiency, security, and other concerns. This paper puts forward a web application that uses blockchain technology to offer a simple method for securely sharing private medical records. It offers real-time tracking of medical records, enhancing security, boosting productivity, and lowering total costs. By enabling infrequent knowledge transfer between healthcare professionals, insurance agencies, pharmaceuticals, scientists, and caregivers of the patient, it will streamline data exchange, enhance decision-making for healthcare, and ensure availability and genuineness. Doctors could use the application to review the healthcare data of the patients by whom they have been granted access, while individuals could use it to upload their data, grant access to the doctors, and read their own records.

**Keywords-** Healthcare Records, Blockchain, Ethereum, Smart Contracts, IPFS, security, privacy.

## I. INTRODUCTION

Blockchain is an emerging, developing technology for distributed databases that uses cryptography to ensure the security, incorruptibility, and integrity of data. These characteristics make for reliable and secure data storage. Blockchain operates without a central authority and keeps all transactions in a chronological order that users can access at any time. This technology guarantees knowledge security and control of patient and medical field data that are susceptible. This technique has many advantages, including being immutable, transparent, hassle-free, and upholding integrity. The principles and different protocols used in cryptography, including digital signature and hashing, made it possible to implement all of these functions.

One of the numerous areas that blockchain has influenced is healthcare. Handling records in the healthcare sector is

simple and secure because to blockchain's many benefits, including transparency and data integrity. Patients are given complete control over their access permissions and become the data's sole owners. Blockchain can be used to undertake multiple medical and clinical investigations, but doing so compromises the privacy and security of patient healthcare data. In these circumstances, it can serve as a solution to all of these problems. Healthcare researchers are working diligently to use this technology to address each of these problems.

In the supply chain for pharmaceuticals, it can also be utilized to detect fraud. Since most individuals rely on these pharmaceuticals for life, it is essential to safeguard them from fraud. Any agreement reached in this matter may have an impact on a specific patient's health. Due to the extensive people involvement, many supply chains are vulnerable to such fraudulent actions.

  
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# Variable temperature, radiation absorption and chemical reaction effects on unsteady MHD flow through porous medium past an oscillating inclined plate

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## ABSTRACT

An analytical study on the effects of chemical reaction on unsteady flow of a viscous, incompressible and electrically conducting fluid past an oscillating inclined plate and radiation absorption through a porous medium with variable temperature and heat source in the presence of transversely applied uniform magnetic field, because of its widespread application in chemical engineering and manufacturing industries. The plate temperature and concentration level near the plate increase linearly with time. The equations of momentum, thermal and as well as species concentration were solved using the perturbation technique. The visual representation of changes in fluid velocity, temperature and concentration, results obtained are discussed with the help of graphs drawn for different parameters.

**Keywords:** Variable temperature, Radiation, Magnetic field, Chemical reaction, Inclined Porous plate

## 1. INTRODUCTION

The study of heat generation or absorption in moving fluids is important in problems dealing with chemical reactions dissociating fluids. Since some fluids can also emit and absorb thermal radiation, it is of interest to study the effects of magnetic field on the temperature distribution vis-à-vis heat transfer when the fluid is not only an electrical conductor but also it is capable of emitting and absorbing radiation. With its broad range of applications in physics and engineering, especially for equipment design, processes of high-temperature, and space technology, radiation on natural convection has become more prominent. Nuclear power plants, hypersonic aircraft, space vehicles, and other recent advancements in these fields include gas-cooled nuclear reactors. Chemical reactions in the context of collective heat and mass transfer flow issues have received tremendous attention in a variety of chemical engineering processes. Chemical reaction consequences are critical in the dispersion of temperature and moisture across agricultural regions, the manufacture and dispersion of fog, cooling tower designs, configurations of chemical process apparatuses and more application in industrial [1-15].

The problem of free convection and mass transfer flow of an electrically conducting fluid past an inclined heated surface under the influence of magnetic field has attracted interest in view of its applications to geophysics, astrophysics and many engineering problems, such as cooling of nuclear reactors, boundary layer control in aerodynamics and cooling towers. The MHD flow with heat and mass transfer plays an important role in different areas of science and technology like chemical engineering, mechanical engineering, biological science, petroleum engineering, biomechanics, irrigation engineering and aerospace technology. Study of radiation with heat transfer and mass diffusion is essential in describing several fluid models. In view of the above some of the authors studied [16-31].

Numerous researchers have been intrigued by the unsteady free convection MHD heat and mass transfer flow associated with radiation, despite enormous uses in the engineering environment and industrial processes. Additional uses for MHD flow include metrology, solar physics, MHD generators, MHD pumps,



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## The Role of Artificial Intelligence in Cyber Security



Journal of  
Electrical  
Systems

**Abstract-** The research paper explores the pivotal role of artificial intelligence (AI) in bolstering cyber security threat detection and protection measures. By leveraging advanced AI techniques such as machine learning, deep learning, and behavioral analysis, organizations can effectively identify and mitigate cyber threats in real-time. AI enables proactive threat detection by analyzing vast amounts of data, detecting patterns, and predicting potential security incidents. Moreover, AI-driven security solutions offer scalability, efficiency, and adaptability, making them indispensable in combating the evolving cyber threat landscape. Overall, AI plays a crucial role in fortifying cyber security defenses and safeguarding critical assets against sophisticated cyberattacks. As cyber threats continue to grow in complexity and frequency, the integration of AI into security frameworks will not only enhance response times but also empower organizations to stay one step ahead of potential attacks. Furthermore, as organizations increasingly adopt AI-driven security measures, the importance of integrating ethical considerations and addressing potential biases in AI algorithms becomes paramount. While these technologies can significantly enhance threat detection capabilities, they also risk perpetuating existing inequalities if not meticulously designed and monitored. For instance, biased data sets may lead to disproportionate scrutiny of certain user groups, undermining trust in security systems. Additionally, the dynamic nature of cyber threats necessitates continuous learning and adaptation from AI systems, highlighting the need for ongoing research and collaboration among cybersecurity professionals, technologists, and ethicists alike. By fostering a holistic approach that emphasizes both technological advancement and ethical responsibility, organizations can better navigate the complexities of modern cyber environments while enhancing their overall security posture.

**Keywords:** Artificial Intelligence, Behavioral Analysis, Cyber Security, Deep Learning, Machine Learning, Proactive Threat Detection, Real-time Protection, Scalability, Security Solutions, Sophisticated Attacks.

### I. INTRODUCTION

The cyber-attack world has grown in pace and complexity due to heavy internet connection, now creating a new environment of cyber-threats that organizations and individuals will never face before. The escalating stats of the complexity of cyber-attacks, and at the same time, the skyrocketing frequency, pose more and more the need for strong defense infrastructure. In this regard, AI has become an inevitable initiative in modernizing automated detection systems and security shields. As an AI that relies on powerful algorithms and machine learning capabilities to deal with cyber threats actively and adapt to the changing environment, AI offers real-time responses to any cyber threat. This research article examines AI as a highly relevant factor in cyber security, exploring how these systems help to improve early warning mechanisms and strengthen defenses. By way of a concise and comprehensive review of the latest AI-based research studies and cases, this paper will demonstrate how artificial intelligence-driven solutions can protect the unremitting integrity of networked infrastructures and digital assets.

Artificial intelligence (AI) is a sport of computer science that allows computers to make decisions that are usually performed by humans, such as solving problems, learning, and making decisions. AI fundamentally contributes to broadening threat detection capabilities in cybersecurity and bolsters defense mechanisms against evolving cyber threats. The astonishing foreground of AI technologies in cyber threats has been frightening. It started with conventional Single-pass detection rules, and over time, it has advanced to sophisticated machine-learning algorithms explicitly designed to adapt to ever-changing cyber-attack methods. Early AI systems did not look for new threats at the beginning of the technological advances. However, with the development of machine learning, AI can analyze big data and identify patterns and abnormalities that reveal cyberattacks.

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## Effects of hall current and rotation, heat generation on MHD free convection heat and mass transfer flow past an accelerated vertical plate

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### Abstract

The effects of radiation, rotation and Hall current effects on MHD free convection heat and mass transfer flow of a viscous, incompressible and electrically conducting fluid past an infinite vertical embedded in a porous medium with heat generation are investigated. It is assumed that the entire system rotates with a uniform angular velocity  $\Omega'$  about the normal to the plate and a uniform transverse magnetic field is applied along the normal to the plate directed into the fluid region. The magnetic Reynolds number is considered to be so small that the induced magnetic field can be neglected.

**Keywords:** Hall current, Rotation, MHD, Free convection, Porous medium, Heat generation

### Introduction

The study of heat and mass transfer for an electrically conducting fluid past a porous plate under the influence of a magnetic field in a rotating frame of reference has attracted the interest of many investigators in view of its applications in many industrial (in the design of turbines and turbo mechanics), astrophysical (dealing with the sunspot development the solar cycle and the structure of a rotating magnetic stars), geophysical (hydrologists to study the migration of the underground water, petroleum engineers to observe the movement of oil and gas through the reservoir) and many other practical applications, that is in biomechanical problems (blood, flow in the pulmonary alveolar sheet). It is well known that a number of astronomical bodies possess fluid interiors and magnetic fields. Changes that take place in the rate of rotation suggest the possible importance of hydromagnetic spin-up. Also rotating heat exchangers are extensively used by the chemical and automobile industries [1-14].

The study of natural convection flow induced by the simultaneous action of thermal and solutal buoyancy forces acting over bodies with different geometries in a fluid with porous medium is prevalent in many natural phenomena and has varied a wide range of industrial applications. For example, the presence of pure air or water is impossible because some foreign mass may be present wither naturally or mixed with air or water due to industrial emissions, in atmospheric flows. Natural processes such as attenuation of toxic waste in water bodies, vaporization of mist and fog, photosynthesis, transpiration, sea-wind formation, drying of porous solids and formation of ocean currents. Such configuration is also





## Impacts of Industry 4.0 on Employment and Opportunities for Sustainability

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### ARTICLE INFO

### ABSTRACT

Digital transformation is a way of using technology to create new procs or modify ones to meet changing business requirements. Reimagining the business process in the digital world is called digital transformation. Technology is changing very rapidly and driving changes all over society. We, humans, not only increasingly use it but also rely on it in our personal lives, we even find our workplaces evolving digitally with most of the processes undertaken by technology. These are all the effects of the fourth industrial revolution or Industry 4.0. Due to Industry 4.0, we all are living a life we are unaware of because we do not understand its works. But there will come a time when its importance will be of utmost and we should not be the ones left out or fear losing what we are pursuing or doing right now in terms of employment. Industry 4.0 has a lot of spectrums in itself but the most important part that is changing all this is the word "Automation". Increased automation will make our time freed up and we will have to focus on more complex tasks. There will be a need for a workforce that is capable of building, problem-solving, programming, and developing technologies. This is just about the people in technology. But as it will affect multiple careers, this paper will give an overall idea of how we as humans in any aspect of the profession should face the upcoming changes and sustain our profession. This paper aims to examine the impact of Industry 4.0 on employment opportunities. To better comprehend how such a digital revolution is influencing modern life and the workplace, the purpose of this article is to analyze the consequences of recent trends and features associated with digital transformation in the sectors of Education and Future Jobs. There will be an elimination of certain employment, a development of others, and a regular emergence of new jobs that do not already exist. In this paper, we'll go over certain things you should take into consideration as you deal with Industry 4.0 and begin to build your profession.

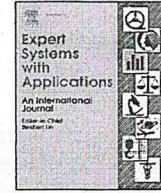
**Keywords:** Industry 4.0, 4th Industrial Revolution, Employment, Education, Future, Jobs.

### I. Introduction

Industry 4.0 is a terminology used by the German government at the Hannover Fair in 2011 to describe a project dedicated to supporting the German industry in meeting future problems. It is the fourth industrial revolution, in which disruptive digital technologies such as the Internet of Things (IoT), robots, virtual reality (VR), and artificial intelligence (AI) are impacting industrial output.

The First Industrial Revolution was based on the mechanization of manufacturing through the utilization of water and steam energy. Because of electricity, mass manufacturing was developed during the Second Revolution. Since the 1950s, the Third Digital Revolution has used electronics and information technology to automate manufacturing. Based on the Third Industrial Revolution, the current Fourth Industrial Revolution is characterized by a technological convergence that blurs the lines between the physical, digital, and biological worlds. According to PwC, the Fourth Industrial Revolution can happen in three phases: The algorithm wave, which is currently developing, will last until the beginning of 2020. In industries including banking, information, and communication, it focuses on automating straightforward computing tasks and





# An effective framework of human abnormal behaviour recognition and tracking using multiscale dilated assisted residual attention network

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## ARTICLE INFO

**Keywords:**  
Human abnormal behaviour recognition  
Human action recognition  
Adaptively modified you only look once V3  
Modified random parameter-based Chimp  
Optimization algorithm  
Multiscale dilated assisted residual Attention  
Network

## ABSTRACT

The prevention of certain unwanted crime events and eliminating them even before their execution can be done by automatic identification of abnormal behavior in humans. Hence automatic prediction of abnormal human behavior is a difficult task to perform. Some of the automated model has been implemented and provided the most promising results. The manual intervention is being the greatest approach in earlier time, yet it brings with numerous errors, consumes more time and more cost effective. Henceforth, the automated model is suggested for identifying the activities. As the scholar focus on machine and deep learning, this classifier may extract the hand-crafted features. But it fails to yield the appropriate solution for finding the activities. Since it belongs to the video frames, the object detection is highly ineffective feature vector and inadequate scale measures of the learning model paves the way for performance degradation. This issue can be resolved by including an attention mechanism in the deep learning model for both monitoring and classification purposes. The recommended Human Abnormal Behavior Recognition and Tracking (HABRT) model performs the following operations, such as the collection of video, categorizing the behavior in the video as normal or abnormal, monitoring, extraction of the object, and classification of the abnormality. The input video with such frames is initially gathered from publically available databases. By using these frames, the abnormal behavior classification is done by Multiscale Dilated assisted Residual Attention Network (MD-RAN), For further enhancement, the hyper-parameters in the MD-RAN are optimally selected by novel Modified Random Parameter-based Chimp Optimization Algorithm (MRP-ChOA). Once the abnormal frames are obtained, the activity tracking is achieved by Adaptively Modified You Only Look Once (YOLO) V3 (AM-YOLO V3). This model encompasses with multiple layers, so that utilized number of layers are determined optimally using MRP-ChOA. Consequently, the objects are extracted from the abnormal frames with the help of AM-YOLO V3. Finally, the abnormalities are classified by using the same MD-RAN. At last, the performance is analyzed and validated with diverse parameters, which are then compared with other algorithms. While implementing the dataset 1, the accuracy value attains maximum in contrast with 3.14% of DTCN, 2.308% of CNN-RNN and 13.7% of ResAttenConvLSTM, correspondingly. Thus, the findings reveal that it has the potential to deliver extensive results for abnormal recognition and tracking.

## 1. Introduction

The assessment of human behavior has been there ever since the early 1900s as an interesting and essential topic in computer vision due to its application in the medical field, smart homes, security purposes, and sports activities (Lopez and Graña, 2022). Human Action Recognition (HAR) system provides the automatic surveillance system in smart homes and public places, thus enhancing the everyday life of the people (Lopez and Graña, 2022). Nowadays, the smart home

application has been used to monitor old age people, thus helping them have a self-regulating, peaceful, and positive lifestyle with improved healthcare amenities using an invasive and automated scenario (Zhang et al., 2022). Dynamic supervision and assessment of the everyday life activities of individuals, such as eating, drinking, walking, sleeping, cooking, dishwashing, etc., can be done using newly developed heuristic algorithms and advanced machine learning approaches (Zhou et al., 2021). The videos may overlap if there are more cameras for surveillance to monitor a public place. The aid of algorithms is utilized to

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# Effective Auto Data Processing Approach Based On Combined ML And CNN For Breast Cancer

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**Abstract**—In current era, there are various auto intelligent approaches to perform enormous activities related to healthcare as it needs. As learning concept plays a vital role to perform certain activities like learning the data's obtained and monitoring that patient behaviour in healthcare. As patient is concern, the heterogeneity problem occurs during the process of data extraction and prediction and also it overcome the problem of improper data accessibility as it needs to be mitigated for the patient's data related to healthcare. Here In order to better evaluate patient monitoring using patient care indicators like cost and staying length, we present an automated approach that integrates AI and IoT while also taking into consideration the challenge of heterogeneity. As the problem of heterogeneity is considered in the data processing to extract the data through certain set of rules to form another representation of data. Based on the pre-treatment information, post-treatment can be monitoring based on the prediction phase through modified Combined Random Forest and Convolutional Neural Network Algorithm to discuss how the effective prediction helps the doctor helps to processes in process treatment by deploying the automated framework with the integration of AI and IoT for real time health monitoring system. Here we have integrated the three phases process namely, pre-treatment, in treatment and post treatment. Here the breast cancer patient is considered, as it takes numerous numbers of small information's as it helps the patient to stay for longer time with longer treatment, which needs proper diagnosis for the treatment and improve the cost and staying possibilities parameters. In the performance analysis, history of the preference of the specific data and retrieve those data effectively based on cost and resource parameters to monitor health of the patient. Here the validation of the framework evaluation based on scalability and reliability improvement.

**Keywords:** Prediction, Random Forest, Treatment, Cancer, Data extraction.

## I. INTRODUCTION

Real-world applications like healthcare, smart homes, etc., all benefit greatly from the intelligent and automated process. This process helps to enhance / improve the task provided by the particular application. During the process of monitoring the patient health care, large data processing and learning based prediction method is needed with the occurrence of heterogeneity problem in the data. As lots of problems are considered related to healthcare, here we have considered the breast cancer patient where is need of quick diagnosis and treatment to be processed with several parameters like cost and staying length [1]. Wisconsin Breast Cancer (Diagnostic) is used for various machine learning algorithms to classify the tumour related to malignant and benign images. As it collects the entire datasets related to malignant and benign images

tumour and so that it segregates the images as cancerous and non-cancerous. In [2], Support Vector Machine (SVM) and Artificial Neural Networks (ANN) are only two examples of the machine learning-related detecting mechanisms that are put to use. By using the Wisconsin datasets, SVM model is utilized to identify the breast image grouping among malignant and benign. [3] In order to improve the health care application that relies on continuous health care through monitoring done online and remotely, it is helpful to discuss the potential of learning opportunities that might assist to diminish in the reinforcement learning involved [4, 5]. This prepares the way for the intelligent approach, which efficiently gives the patient the correct diagnosis. The article discusses the U.S. healthcare system and how it takes into account and processes a massive amount of data in order to get fresh insights and provide accurate diagnoses for patients. With the aid of this conversation, the framework may incorporate machine learning and the internet of things more successfully. By splitting up the monitoring process into pre-treatment, during-treatment, and post-treatment phases, we are able to better account for the problem of heterogeneity and provide an automated approach that integrates machine learning with IoT. When the pre-treatment is added with IoT process helps the data extraction, which is extracted and process the data pre-processing operation to the doctors. Then it helps to improve the in-process treatment with some learning algorithm to predict the process well in advance which helps to improve the staying time and also cost for the patient which is nothing but the post process treatment improvement. In this propose work, self-learning method is adapted with improved parametric like cost and planning staying based on cancer patients with effective data extraction. The learning method helps to obtain the large volume of data and generate those data with incessant data flow. While consider the patient with breast cancer helps to enhancing the automation is applied for the time consuming with the determination of various patient care metrics. It also helps to enhance the caring for the patient, decrease the doctor's diagnosis role and reduce in the cost with respect to the monitoring and resource usage.

## II. RELATED WORKS

In this recent era, there is a significant role played by the methodology with automation and intelligent for the enhancement of the health care services. In this case, the process of health monitoring process takes a part with the integration of healthcare concept. A widespread survey [6] and [7] is taken related to health care associated with IoT based on various real time applications like smart home, health care, smart traffic, etc. After incorporating the IoT helps to provide intelligent to collect the data i.e. data

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