iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 12 **Issue:** XI **Month of publication:** November 2024

DOI: https://doi.org/10.22214/ijraset.2024.64695

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 12 Issue XI Nov 2024- Available at www.ijraset.com

Artificial Intelligence

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Abstract: Artificial intelligence is a science that aims to perform tasks that require human intelligence. For the past two years, it has been used as a development tool in many areas such as prediction, health, security, and also improves the performance of production and services. Since artificial intelligence and its operations are based on too much data, algorithms, and scientific data, users cannot understand and comprehend the content and do not have the skills necessary to use this technology. Since artificial intelligence is controlled by machines and algorithms, it is difficult to determine the cause of system software and hardware crashes. Using this system requires significant funding. However, there are some facts that support the adoption of AI, such as the availability of transferable power in the cloud, the availability of simple software libraries, and the availability of data. These changes allow users to create their own algorithms.

I. INTRODUCTION

Artificial intelligence is the most challenging area of computer science and involves simulating intelligent behavior in computers. Artificial intelligence technology is seen as a feature of the product. This technology is in the background and can improve the overall performance of the body. Artificial intelligence can be used with software APIs and user interfaces. It uses machine learning to map standard inputs and parallel outputs by having data obtained from repeatedly providing standard input and output examples. It selects the appropriate model to achieve the desired results by adapting it to the available budget and training materials. AI tracks performance and helps organizations build customer trust.

From cancer treatment to food security for a growing population to climate change analysis, AI offers great solutions to the soft problems faced by society. It plays a key role in games like poker and chess, where the system decides on various tasks based on intuitive knowledge. AI makes it possible to interact with computers that understand human language. Speech recognition is also an important part of cognitive skills. It can understand a lot of noise, background noise, and the user's voice that changes due to cold. For example, Mastercard IJCSE Copyright uses intelligent decision-making technology to analyze different content to detect fraudulent transactions, increase real-time accuracy, and reduce denial of the truth.

AI systems are able to analyze handwritten text, identify the letters shape and translate it into modifiable text. Visual models analyses, understands the visual input on the computer. Examples for such systems are, face recognition system, expert system to diagnose the patient. Robotics is an application of AI where robots are able to perform the tasks given by human. ANN is used as decision supporting system in clinics for the purpose of diagnosis process such as concept processing technology used in EMR software.

Three ways in which AI is used by HR persons and recruiting professionals are screening the rank candidates and their resumes, use of job matching platforms to predict candidate success in given roles and automation of repetitive communication tasks. Heuristic search is used by telecommunication companies in the management of their workforces. For automatic gearboxes in automobiles, fuzzy logic controllers have been developed. Home water quality monitoring applications are developed by artificial intelligence in combination with sensor technologies. Familiar applications of AI like Netflix, Amazon in which user activities are analyzed and compared with others to decide which shows or the products to suggest using ML algorithms. AEG (Automatic Exploit Generation) IA a bot that determines a software error that causes security problems.

Artificial intelligence seeks to explain, through computation process, all the views of human intelligence. It is able to interact with environment through the use of sensors and is the ability to make decisions without human intervention. In simplest term AI is manufactured thinking. Intelligence can be viewed as an individual property or quality that can be distinguished from all other properties of an individual. Artificial Intelligence can also be noticed in the actions or the ability to perform certain tasks. The earliest approach to artificial intelligence is called classical AI or symbolic AI. In these earliest approaches it is predicted that each and every process in which either a person or machine participation can be conveyed by symbols which are adjustable according to the set of predefined rules. AI is normally applied to the experimental or theory applications of a computer's capability to behave similar to a human. Artificial intelligence capacity is generally classified as either strong or weak AI. Strong Artificial Intelligence is a system that truly solves problems independently.

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The examples for weak Artificial Intelligence include modern working applications. Artificial Intelligence is useful only when it makes contributions to society. AI has taken the credit-scoring into a new standard, permitting the automation, high accuracy and speed using both the concept of big data and AI algorithms.

1) To improve the management of financial assets artificial intelligence algorithms are used.
2) AI acts as a spy for financial sectors, to prevent the fraud activities like money laundering.
3) AI is used to point out and select financial data, and then to provide it as reports, websites, newsletters and articles.
4) Artificial intelligence can also be used to go ahead in an attempt to enhance the customer support.

The organization of paper is as follows, Section I contains the introduction to the Artificial Intelligence, Section II contains the related work carried out so far, Section III contains the conclusion and future work to be carried out.

II. RELATED WORK

Apoorva et al., [1] proposed a simple neural network model which can detect whether the patient has dengue, with the preliminary CBC test report's data. The patient data was collected from a hospital. It is observed that the system correctly classified the unseen test cases. The proposed system has a significant test set accuracy of nearly 95%.Time being the crucial factor in the treatment of dengue, the proposed system thus has the potential to help doctors to save many more lives in a short span of time. As a future research direction, the system can be further enhanced by introducing more pattern recognition techniques for the process of classification, and the introduction of locality specific factors to build a widely reproducible model as possible.

Farzin et al., [2] proposed a Design Robust AI based Variable Structure Controller with OCTAM VI Continuum Robot. This model used variable structure controller to provide high performance. The artificial intelligence theory like Fuzzy Logic was used in order to eliminate the chattering. The controller has the acceptable performance in the presence of uncertainties. The disadvantage of this model is that the system implementation is expensive.

The Application of AI in Grinding Operation by Ahmed et al., [3] proposed an effective system for monitoring of machining processes to improve productivity and reliability. This study presents a novel approach for the continuous online monitoring of grinding operation using low cost visual and infrared imager along with sensors like AE sensor, dynamometer, accelerometer, etc. The monitoring of grinding operation is done by developing and installing a multi-sensor system. Signal processing techniques and image processing techniques are used along with Artificial intelligence. The advantage of the system is that it can reliably distinguish between normal and faulty grinding condition. The disadvantage of this model is that the lack of performance under real life conditions.

Encouraged Short Term Load Forecasting by Sumit et al., [4] presented system for short term load forecasting with the support of MAPE and MAE accuracy scale by using the time series as input pattern for neural networks. In order to eliminate the downside of Gradient Descent algorithm, the input data is trained by FFN. The GANN technique is used here for the initialization of input parameters of the neural network. The advantage of the system is that the overall performance is considerably better and the disadvantage is that the entire process is time consuming.

Enhancing the performance of information retrieval via AI proposed by Sharma et al., [5] introduced a novel architecture for the fast information retrieval. Big data is a large data which requires proper strategies for dealing with it. The proposed model is able to automatically acquire knowledge and intelligently process the big data and retrieves the information according to the business need. This model helps in rapid information retrieval with high accuracy. But the amount of time it will take cannot be predicted.

Cyber Defense using Artificial Intelligence by Girish et al., [6] introduced a model that can defend itself from intrusion detection and various network attacks. The primary goal of this system is to evolve a framework on which a number of multitasking processes can be mapped. AI techniques are used for the detection of intrusion. The artificial immune system detects security threats against wireless sensor network (WSN). The advantage of the system is it detects any suspicious activities in the server and reduces the network load to the server. The disadvantage of this model is that the sensors have many limitations in terms of design, storage and functional limitations like communication and processing.

Jagruti et al., [7] proposed analysis of reliability using AI technique. The paper discussed the placement of DGs method for improving reliability of distribution system. The Particle Swarm Optimization technique reduces losses and enhances reliability indices and reduces reliability cost. This method is carried on IEEE 14 bus system. The advantage of the system is that it reduces the total power lost and the disadvantage of this model is that we need to precisely identify the location of optimal number of DGs placed in the system.

Amandeep et al., [8] proposed Cyber Awareness Improvement using Artificial Intelligence. This paper demonstrates how intelligent the tool‖agent‖ that can be that can be used in prevention of cyber-attacks.

Cyber-attacks have a huge impact on the IT industry. As web applications are being used widely on critical and basic activities, they have become a very popular target for security attacks. For this experiment, the combination of Genetic Algorithms and Fuzzy Logic are used to provide high performance. A 3 program that implements a DSDV routing protocol is the core of this experiment. Three threads are included in this program. Each thread state is color- coded. The advantage of the system is that the thread state changes are identified easily.

Kiritkumar et al., [9] proposed SVC optimal Placement for minimizing loss in Electric Power Networks using Artificial Intelligence Techniques. Among all other FACTs devices, the SVC is used for the experiment because of its maturity as well as affordable cost. The Genetic Algorithms are also used in order to identify the location and size of SVC. IEEE 30bus test system is used to run the program. This study only addresses the sizing and placement of SVC devices for the minimization of power loss in the network. The advantage here is that it reduces the power loss due to improve in voltage profile.

Shyama et al., [10] proposed Artificial Intelligence based cancer prediction. Nowadays there is a necessity of new techniques to accurately diagnose and predict cancer disease. The proposed model is based on Artificial Neural Network based prediction. The data presented in this paper is from the patients suffering from bladder cancer. This model is trained by three different ANN networks. The two methods namely averaging and voting are used in this model. The performance of this model is analyzed using the parameters like sensitivity, accuracy, etc. The result shows that the ANN methods provide higher performance than other methods like regression models.

Pavithra et al., [11] proposed Artificial Intelligence for Speech Recognition. Speech recognition is commonly used in commercial, military and for business purpose. The speech recognition task is performed by software named speech recognition engine. The speech recognition engine works based on audio signals and it then enables the communication among human and the computers. This model mainly helps physically challenged people as a support. The models are user friendly and do the task in an effective way. The disadvantage of this model is that we need to take care of environmental conditions.

Esha et al., [12] presented various black box testing techniques. This work describes the use of AI in black box testing. Black box testing is a technique that finds errors in a software module without taking into account the internal working of the software. Modeling better test cases for black box testing is important to create high quality software. This paper presents both artificial intelligence techniques as well as conventional techniques used to increase the efficiency of black box testing. The disadvantage with this model is that the test cases are challenging to design.

Kerem et al., [13] proposed a case study on wind power forecasting using artificial intelligence. The main purposes of this study are to efficiently estimate wind power at 61m at the wind measurement station. This study uses 25926 units of real time data including temperature, wind direction, humidity, pressure, wind power at 31m. For this study, 100 artificial neural networks were trained and tested using Multilayer Perceptron. The ANN consists different hidden layers, output functions, and output functions that are used to make accurate wind power estimation in mat lab. The advantage of the system is that the error rate was low. The disadvantage here is that the operation of estimation is difficult task because wind naturally has stochastic structure. Artificial Intelligence in Adaptive Control Strategy Design by Kostandina et al., [14] proposed a model that proves the ability of reinforcement learning to respond to real time traffic conditions. The learning agents have been implemented as controllers in order to provide optimal performance. The intelligent agent systems in traffic control according to Genetic Algorithms, Fuzzy Logic, and Neural Networks. The algorithm used is Q-learning algorithm. The effectiveness of the agents was measured by several factors like total travel time spend by all vehicles in the network, delay of all vehicles, and stop time. The AI techniques can detect changes in traffic conditions and update traffic signal timings accordingly. The model is efficient and feasible.

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Sneha et al., [20] proposed an algorithm that mainly focuses on two parameters namely energy consumption and network life time. In Ant swarm algorithm, EAAR and ANTHOCNET protocols are used to minimize energy consumption of overall network. The proposed APTEEN protocol with threshold energy improves the life time of the network when compared with the APTEEN protocol. EAAR protocol is used for minimizing energy.

Koushal et al., [21] provided an overview of field of artificial intelligence and focuses on applications that uses ANN and AI techniques. The most general application in which neural networks are used in data analysis, control pattern recognition, and clustering. The ANN have features like fast processing, ability to learn the solution from given examples. The applications of neural network include animation, robotics, etc.

Zhou et al., [22] proposed a system which focused on two steps i.e., training neural networks and combining component predictions. They used two main algorithms, i.e., GASEN approach and genetic algorithm where the context of regression and classification are used to analyse relationship between ensemble and its component neural networks. The advantage here is, it reduces Bias and Variance and is useful in designing powerful ensemble approaches. Since its aim is only to show the feasibility of theory, GASEN has not been finely tuned.

Ahmad [23] proposed a Brain Inspired Cognitive Artificial Intelligence for the Extraction of Knowledge and Intelligent Instrumentation System. Brain Inspired Intellectual Artificial Intelligence is a knowledge growing system which is used for the extraction of information and it will realize the intelligent instrumentation system when applied to the instrumentation system. Intellectual Artificial Intelligence, Extraction of Knowledge and A3S algorithms are used. The knowledge is growing continuously as time passes by using the A3S algorithm and Cognitive processor.

A Fundamental Study on Artificial Neural Network is done by Hong [24]. Here information processing technology applications are used. This paper gives the artificial neural networks working principals and data processing characteristics. It also describes some of the problems in technology applications. Neural network has the strong ability to learn and whole network is self-adaptive. The disadvantage in neural network is a model with lower complexity means fewer cells.

Using CANFIS and Genetic Algorithm Intelligent Heart Disease Prediction System proposed by Parthiban et al., [25] Algorithms used in this papers are Genetic Algorithms (GA), CANFIS, Heart disease, Membership Function (MF).CANFIS is combined with genetic algorithm to analyses the existence of heart disease. In predicting the heart disease CANFIS has a great potential. There is cost reduction by using this system. The disadvantage is CANFIS required sufficient data base volume to build the model.

Using Naive Bayes Decision Support in Heart Disease Prediction System proposed by Subbalakshmi et al., [26] Nave Bayesian data mining techniques are used for classification. The system provides a training tool for the medical students to diagnose the patients and to train nurses. The System helps to significantly improve the clinical decisions. Bad results may occur because Nave Bayes classifier generates a very strong assumption that the output class given by any two features is independent.

A Review on Artificial Intelligence Approach on Prediction of Software Defects proposed by gupta et al., [27] presents a review of the use of different techniques for artificial intelligence techniques in the field of software defect prediction Before the initialization of project need to give more attention this could save time, work and money. Early estimation helps on controlling, planning and executing software development activities. The main contribution of this literature review is it gives better understanding of the field. Some of the techniques like Support Vector Logic Regression, neural network, are not giving the accuracy greater than 88 percent.

Alrajeh et al., [28] proposed Artificial Intelligence Techniques Based Intrusion Detection Systems in Wireless Sensor Network. The Intrusion Detection Systems detect the intrusions and inform the professionals in time. Designing Intrusion Detection Systems includes many methodologies and techniques. Genetic Algorithm and Artificial Immune based Intrusion Detection System is used. When Wireless Sensor Networks are placed in unattended environments they are unsafe to different security attacks. As new threats and security vulnerabilities are introduced by the attackers Network security has to be increased.

Cognitive Artificial Intelligence Method for Interpreting Transformer Condition Based on Maintenance Data proposed by Bachri et al., [29] Expert-dependency can be reduced and accurately perform transformation condition interpretation by using Cognitive-Artificial-Intelligence (CAI) method. Cognitive Artificial-Intelligence A3S OMA3S Information Fusion Transformer Condition are used. Energy efficiency and minimize disturbance caused by electromagnetic transmission can be obtained by using special purpose processors. The less accurate result may occur by the usage of less parameter.

Awwalu et al., [30] proposed Artificial Intelligence in Personalized Medicine Application of AI Algorithms in Solving Personalized Medicine Problems. A literature review tells that most of the jobs done by the doctors today are replaced by some futurist think algorithms and machines. The algorithms used are Artificial neural network (ANN), support vector machines (SVM), Nave Bayes, and fuzzy logic.

The disadvantage is research and implementation costs, and government regulations are also challenges that made are critical to the implementation of personalized medicine.

Using Artificial Intelligence Techniques Cyber- Awareness is improved proposed by Merat et al. [31] a sequence of high index threads has to be attended and managed throughout the planned zone to maximize the objective function. A least priority index thread is to be ignored by the overreaction of process for the better performance. SHOWMAN analogy is introduced to describe multitask initiative. Traffics and Future process loads are calculated to find the desired state. There may be some out of margin penalty and poor performance because Synchronized threads and many attempted threads are not able to disengage. Therefore, switching time is reduced to zero.

Jani et al., [32] proposed Artificial Intelligence Based Self Assemble Robot. A pair of robots can be obtained after the implementation. For every 2 minutes one robot can move in clockwise direction and the other one in a counter clockwise direction. Self-assembling, swarm robotics, embedded robotics are used. Degree movement is also there for 2 minutes for main robot. The module is very cheap and it's very easy to program. It is reliable, strong and the sensors ranges in meters are huge. Physical look will not be there for robots and in face to face detection may take longer time Power supply problem is there.

Samy et al., [33] proposed Artificial Intelligence (AI) Diagnostic and Conventional Ratio methods in Electrical Transformers for DGA. The ratio of matched results from conventional ratio methods is lesser than the ratio of matched results from artificial intelligence diagnostic methods. Dissolved gas analysis, conventional ratio methods, artificial neural network are used. Dissolved Gas Analysis (DGA) is one of the most widely used diagnostic tools for detecting and evaluating faults in the electrical equipment for detecting and evaluating mistakes or faults is done by Dissolved Gas Analysis diagnostic tool. To diagnose multiple faults conventional methods are unfit.

A framework for the computation of conceptual blending by Manfred et.al, [34] presented a concept innovation method that is considered as a unique and a fundamental human engine for inventive thinking in cognitive science. The work was based on Cognitive theory of conceptual blending where programming the answer sets i.e. ASP is used to perform most of the reasoning by creating a series of theory transformations. The ASP implementations along with the python scripts perform exterior information processing if needed. It allows accessing communalized and generalized versions of the input designations, which intern helps to identify the useful blends. But, running the system on the congregation of concept definitions and development of evaluation methods to measure the standard of generated blends are the future works.

Mark et.al, [35] proposed the generality and complexity of learning the answer set programs. The main concept here was the computational complexity analysis of each framework with respect to two decision problems of determining whether the solution of a learning task is a hypothesis and is there any solution for learning task. This was based on Context Dependent Learning of Ordered Answer Sets.

Almost, all of the results that are presented have labelled the non-noisy learning frameworks. But, did not upgrade the propositional complexity results proposed to perform the learning and analysis of answer set programs of first order. Deep Blue proposed by Murray et.al., [36] focused on building a world-class chess machine, i.e., deep blue. It is an analogous system developed to carry out the tree searches of chess game. They made use of Content-addressable memory algorithm, Dual credit algorithm, parallel search algorithm, selective search algorithm. Searching the chess game tree top levels, and then the distribution of the leaf positions to the worker processors is done by the master processor. The workers will carry out extra search for some levels, and then gives their leaf positions to chess chips for the further search of few last levels of the tree. The advantage here is the large searching capability, non-uniform search, and end game databases. But, the parallel search efficiency was not up to the mark. With the addition of an external FPGA, the hardware search and analysis was not flexible and efficient enough.

Mingsheng [37] proposed quantum theory, quantum computation and AI which mainly focused on examining the applications of quantum computation in AI and to analyses and evaluate the interaction between AI and quantum theory, by making use of Deutsch Jozsa algorithm, Quantum algorithm and Grover's algorithm. The paper could be a useful guide for the researchers in the field of AI, who are going to explore deeper and further connection between quantum computation and AI, as well as quantum theory. Fault-tolerant quantum computation and quantum error correction are not discussed here.

Hidden semi-Markov models were proposed by Shun-Zheng [38], where the conventional model which includes the variable transition and explicit duration, and residential time of HSMM, are discussed. Various observation models and duration distributions are presented using Forward backward algorithm. HSMM is used in hand writing recognition, anomaly detection, speech recognition and Network traffic characterization. In case of a non- stationary situation, the parameters of the model should be updated online with the increase of observation sequence length or with time. Therefore, forward backward algorithms based, re-estimation algorithms become unsuitable.

Patrick et.al, [39] did a work on Robot ethics: Aligning the issues for a technologized world, based on the idea of Nanobot. It describes the role of robots in the society and survey the various social and ethical issues located in three broad categories: law and ethics safety and errors, and social impact. Also insists that, robot must have sensors to obtain the information from the environment, and a processing ability to analyses some aspects of cognition, and actuators to enable the robot to react to the situation efficiently. The invention of robots in the field of, automobiles, printing press, computers, gunpowder, vaccines, and so on, has a tremendous impact worldwide. Robots are the computers that will aggravate the problem, as well as increases the duress on the rare earth elements required to structure the energy resources and computing devices that are required to strengthen them. Networked robots would enhance the amount of radiation of radio frequencies in addition to the human health problems.

The dropout learning algorithm by Pierre et.al, [40] proposed that dropout is an algorithm introduced for guiding and training the neural networks by dropping the units randomly, in order to prevent their co-relation. Dropout can also be linked to the stochastic neurons and used to estimate the firing rates. The convergence properties of dropout are understood in terms of stochastic gradient descent. The precision of the dropout approximation and its level of selfconsonance are increased by using sparse encoding and keeping the weights small, in order to achieve Partial variance minimization. Usage of dropout algorithm for shallow and deep learning is also very effective.

Robotic manipulation of multiple objects as a POMDP was proposed by Joni et. al., [41] which Investigates the manipulation of unknown multiple objects in a crowded environment. A general reward based optimization objective is allowed and uncertainty in partial observations and temporal evolution is taken into account, by modelling the problem as a partially observable Markov decision process (POMDP). Their work was based on Monotonic policy value improvement algorithm. Different action choices are weighted in a principled manner by making use of probabilistic model used in POMDPs. A POMDP selects actions that gather information, but will not give the immediate reward, when the problem so requires.

Sverin et. al., [42] proposed an implementation of artificial cognition for social human robot interconnection which was an effort to distinguish the challenges and then to present some of the important decisional issues which must be labelled for a cognitive robot in order to share the tasks and space with human beings successfully. They made use of Common and different ancestor's algorithm. It provides enough levels of parametrization, so that they adjust to different tasks, various environments, and different levels of engagement of the robot varies from working as a team mate to a pro-active or assistant helper. Combining large cognitively interdependent yet technically autonomous cognitive processes is done by using integration model. But, it is unaware of completely implemented architecture that combines all these points effectively in a coherent manner.

Paradigm shift: Engineering artificial intelligence and management strategies fusion was proposed by Alhameed et.al, [43] which focuses on investigating the management strategies that uses Artificial Intelligence to capture, perceive, and process the real-time data in order to predict and direct the enterprise performance by making use of pattern recognition algorithm. The fusion of AI and management engineering can increase the effectiveness and efficiency in the attainment of organizational goals, when AI is programmed to interact, motivate and make judgements based on the statistical measurements.

Korf [44] did a work on a complete anytime algorithm for number partitioning by using Complete Karmarkar-Karp (CKK) algorithm to solve two-way number partitioning problem. That means he extended the KK heuristic into a complete algorithm to split given numbers into two subgroups in such a way that the sum of all the numbers in each subgroup are nearly equal. The KK heuristic places two largest numbers in different subgroups, by substituting them with their difference, at each cycle. The main contribution of this paper is that it extends an effective polynomial time approximation algorithm that is used for number partitioning into a complete algorithm, CKK.

Between MDPs and the semi-MDPs: A framework for the temporal abstraction in reinforcement learning is proposed by Richard et.al., [45] using conventional value iterative algorithm. Flexible representation of knowledge at various levels of temporal abstraction can trigger the planning and the learning process of large problems. For this purpose, a framework has been introduced within the context of MDPs and reinforcement learning. It helps us to manage the closedloop policies, stochastic environments and temporal abstraction of goals. Also, there might be conclusions for the temporally extended perceptions. Improving the model of an option is possible only when that option terminates.

Pranav [46] worked on emotion in artificial intelligence and its life research to facing troubles. It provides associate degree in increasing range of theoretical and experimental come each in AI and AI life and presently two computer science areas use feeling on their analysis. Connection of emotion-based process experiments may be the way to own clues concerning unidentified mind functions, an experiment for theories of natural feeling. Although it doesn't guarantee that it's doable to own one model that response theg bulk of queries, makes an attempt to answer these queries can even serve to point out alternative limits emotion.

Artificial Intelligence in cyber security proposed by Dr. Pranav [47] presents a survey on computing the applications in cyber security, and analyzes the probability of enhancing the capabilities of cyber security by suggesting necessary changes in the intelligence of security systems. He made use of Standard mounted algorithm. It concludes that the helpful applications belong to the applications of artificial neural networks in the field of perimeter security and some other cyber security areas.

Bank cheque signature verification system based on Artificial Intelligence is proposed by Ashish et al., [48] which deals with computerized signature verification in banking application by making use of ANN algorithm. Using various techniques, different parameters are extracted from the signature and are used to verify that signature. The parameters are given to trained neural network to detect whether the signature is forged one or genuine. It helps in identifying the exact person and provides more accuracy in verifying signatures for implementation.

Gurwinder et. .al., [49] proposed A Systematic Performance Comparison of Artificial Intelligence Techniques used for Automated Licensed Number Plate Recognition (ALNPR) System can be used for applications such as travel time measurements, vehicle classification, route choice observations, through traffic surveys etc. A permanent installation would improve the incident detection and traffic state, for operations on urban roads or motorways. It can be used to optimize traffic control systems and to inform the drivers. The systems would provide necessary information on travel patterns. It can be implemented in detection of stolen vehicles, in surveillance systems, and checking of vehicles at posts, toll plazas, barriers and other entry points. The algorithm used is neural network based genetic algorithms. As compared to conventional techniques, the techniques based on neural network recognize the image fast and techniques based on fuzzy logic produced more accurate output is the advantage. The disadvantage is Limitations on conventional methods.

Swarm Intelligence from Natural to Artificial Systems: Ant Colony by O. Deepa et.al, [50] Ant Colony Optimization (ACO) is the algorithm used where at present the algorithm has emerged as one of the main metaheuristic approach for remedy of combinational optimization problems that is useful finding the shortest path along building graph. This describes about various way of acting of ants, Ant Colony Optimization algorithms, its use and the present tendency. The advantage is that if one node is broken it allows dynamic rerouting through shortest path and convergence is proved by distributed computation. The disadvantage is that convergence is promised but time to meet is undetermined and Theoretical analysis is difficult.

Harjit et.al, [51] proposed Artificial Intelligence Revolutions and India's AI Development: Challenges and Scope. This discusses development in Artificial Intelligence at universal level and their effect on local and also global levels. Advantage discussed in paper is the use of AI helped to better use of energy, time and resources to reach the target audience in the election campaign. But the use of AI will lead to job elimination at every level and it will lead to arise negativity within political trends. It will affect relations between and within nations Sakthivel et. al.,[52] proposed Estimation of Future Claim Frequency using Artificial intelligence in Non-Life Insurance where evolved the method for forecasting the future claim frequency of the portfolio insurance in basic insurance using ANN with use of the Bayesian credibility inputs with satisfactory illustration. The algorithms used are gradient tree-boosting algorithm and back-propagation algorithm. In case of Poisson/gamma model, compared to Bayesian credibility, ANN provides good evaluation of original claim frequency for non-life insurance. But it does not produce reliable and exact forecast of claim frequencies of future.

Deploying Artificial Intelligence Techniques in Software Engineering proposed by Maria et.al.,[53] where the paper focused on techniques that can be positioned in problem solving related to software engineering processes evolved (or that are being developed) in the artificial intelligence. Evolutionary algorithms were used for the purpose. AI algorithms are already gives intelligent development, testing, software analysis and decision support systems. Limitations still exist in automated programming and are impractical sometimes and the problem lies in synthesis of big programs. Artificial Intelligence in Power Saving and Games proposed by Piyush et al [54] Genetic Algorithms and A* algorithm are used. This paper is based on the Artificial intelligence concepts, areas of interest in artificial intelligence and system damping of the oscillation and provide stability and high quality performance in the field of artificial intelligence used Power System Stabilizers (PSS), to protect the avoid network intruders in the Network Intrusion Detection, in the medical area for medical image classification in the field of medicine , in accounting databases, and the application of Artificial intelligence techniques in computer games in providing features and to solve all the common problems.

Enhanced head Cluster selection algorithm using Artificial Intelligence technique proposed by Navneet et.al, [55] where when leach protocol is used for throughput maximization, an advanced version of neural network algorithm has been implemented. They have presented an enhanced version of LEACH protocol (LEACH-TLCH) algorithm which is considered to regulate the energy utilization of the system and increase the life of the system. In this algorithm as collated to the other development algorithms, the throughput is more balanced.

Predicting Material Removal Rate using an Artificial Intelligence Approach proposed by Shraddha et. al., [56] where models developed using the technique ANFIS can be successfully used to label the problems. For training and testing datasets, Low Root Mean Square Error (RMSE) has been achieved. Due to the data non-linearity, AFNIS is an efficient quantitative tool to predict MRR. Subtractive clustering algorithm and Hybrid learning algorithm is used. Plagiarism Detection Using Artificial Intelligence Technique in Multiple Files proposed by Sahu et.al. [57] Where kNearest Neighbor Algorithm is used. K- nearest neighbor method is much useful in pattern recognition as well as to find copied dataset to detect plagiarism. It provides provide more accuracy and efficiency to detect plagiarism.

In Simulated Air Combat Missions, Artificial Intelligence is applied for Unmanned Combat Aerial Vehicle Control based on genetic fuzzy algorithm by Nicholas et al., [58] which focuses on the rise in the capacity in making real-time decision. Cooperative Task Assignment Algorithm and Genetic algorithms are used. The GFT is especially desirable when either for safety or performance assurance the problem is need to be validated and verified.

Artificial Intelligence Algorithm based Single Chip Microcomputer for Teaching Evaluation proposed by Huai et.al. [59] Where genetic algorithm and SVM algorithm are used. In solving practical problems, the evaluation system and method are effective and feasible. The scientific basis is provided for the continuous development and improvement of single chip computer teaching system in universities and college.

Artificial Intelligence Model Development for Turning MRR Prediction proposed by Vinay et.al. [60] Levenberg- Marquardt (LM) training algorithm is used. It explores the outcome of process parameters in turning of AA6061 T6 on standard lathe. It helps in economic lathe machining.

A GTS Allocation Adaptive Scheme for IEEE 802.15.4 proposed by Yu-Kai Huang et.al. [61] This section develops a duplicate model and a logical model to explore the production of AGA scheme using the Bandwidth allocation algorithm. The paper presents a new dynamic resource allotment scheme known as GTS allocation to improve GTS process performance for IEEE 802.15.4 WPANs in the beacon-enabled model, which takes low delay and fairness. Scheme was designed according to the present IEEE 802.15.4 MAC protocol, and IEEE 802.15.4 devices.

Articial Intelligence Techniques based EMG Pattern Recognition proposed by Sang-Hui et.al.,[62]. Using decision algorithm, for the authority of a strong prosthesis externally, the electromyography (EMG) signals from body's musculature can be used to recognize motion commands. The advancement towards pattern identification using EMG concentrates on producing almost proper results with computation time as less as possible using little subject training and the extracted feature parameters. It seems to be an advantage over other techniques that requires training. To nd finest parameters of feature given as inputs to EMG pattern classier, further work is recommended and for more accurate pattern identification, with the collected proof have to enhance the decision algorithm.

Spangler et.al.,[63] proposed The Role of Artificial Intelligence in Understanding the Strategic Decision-Making Process using heuristic and frame-based procedure along with analytic/algorithmic approach. The architectures are influence after the processes of global conclusion making by firms, thus making it more dynamic to the aid of the distributed problem solving.

Heart Attack Prediction by Extracting Significant Patterns from Heart Disease Warehouses proposed by Shantakumar et.al., [64] For extracting notable patterns from data warehouses of heart diseases, they presented a wellorganized procedure, for the efficient prediction of heart attack. Using K-means clustering algorithm, clustering of heart disease warehouses that are pre-processed is done to extract most applicable data to heart attack. MAFIA algorithm is used to mine the frequent items. With the help of the patterns opted significantly, using the artificial intelligence techniques an efficient heart attack prediction system has not been developed.

Chithra et al., [65] proposed the review of system designed for heart disease prediction using hybrid intelligent and data mining techniques. States that offline training of neural network is good for early stage disease prediction and using pre- processed and normalized dataset, good performance can be obtained. The research was based on ANN, hybrid intelligent algorithm. The advantage of using hybrid intelligent algorithm is increased accuracy with feature subset selection. The disadvantage is, choosing the algorithm for feature reduction is complex and the training time is very high.

III. CONCLUSION AND FUTURE SCOPE

The aim of the literature survey is to yield a broad review of the key technologies and the issues to its different disciplines. The AI field provides huge amount of promises like solutions and optimization for different types of problem statements. However, AI throws up key perspective and experimental questions of ethics and administration which plays a major role with enlarged acquisition of the technologies.

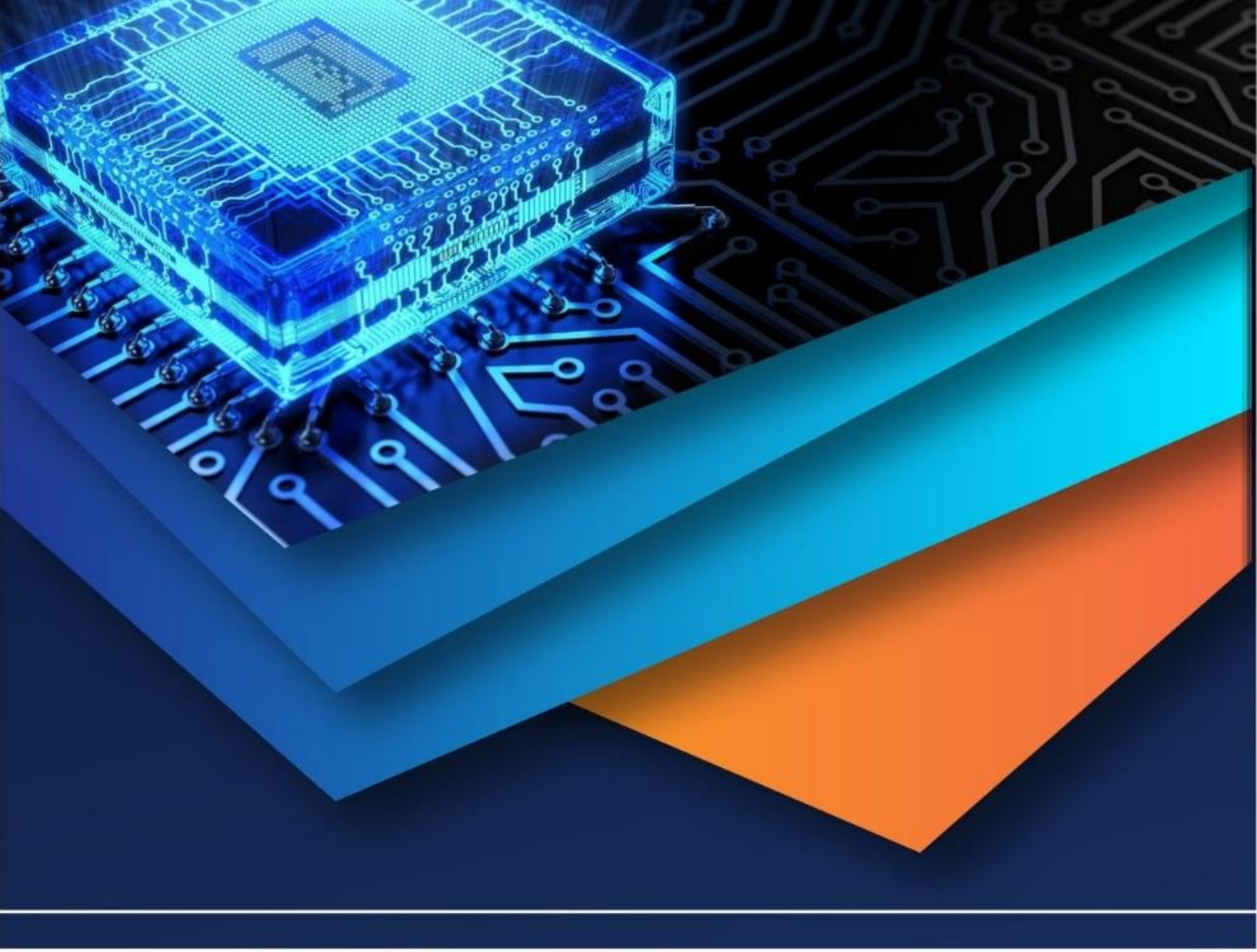
AI undertaking some of the stress between efficiencies, and the objection pointed to by those advocating higher consideration in its acceptation may arrive inappropriate, here the important thing is finding the points of conflict, so that we are capable to re-examine some of the legal which are already exist and regulatory arrangements, and build new ones if needed.

For the future of work, the AI will generate both threats and opportunities. As the humans are more creative than machines, the creative work will remain the same. In the future humans may assist machines by concentrate more on creative work and work alongside machines that will create the possibilities which is unknown and new professions. Today the algorithms which are run by AI and machine learning's are more accurate in the field of medical. As the old life do not apply anymore it is important that government will take the action as AI becomes more common in society.

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