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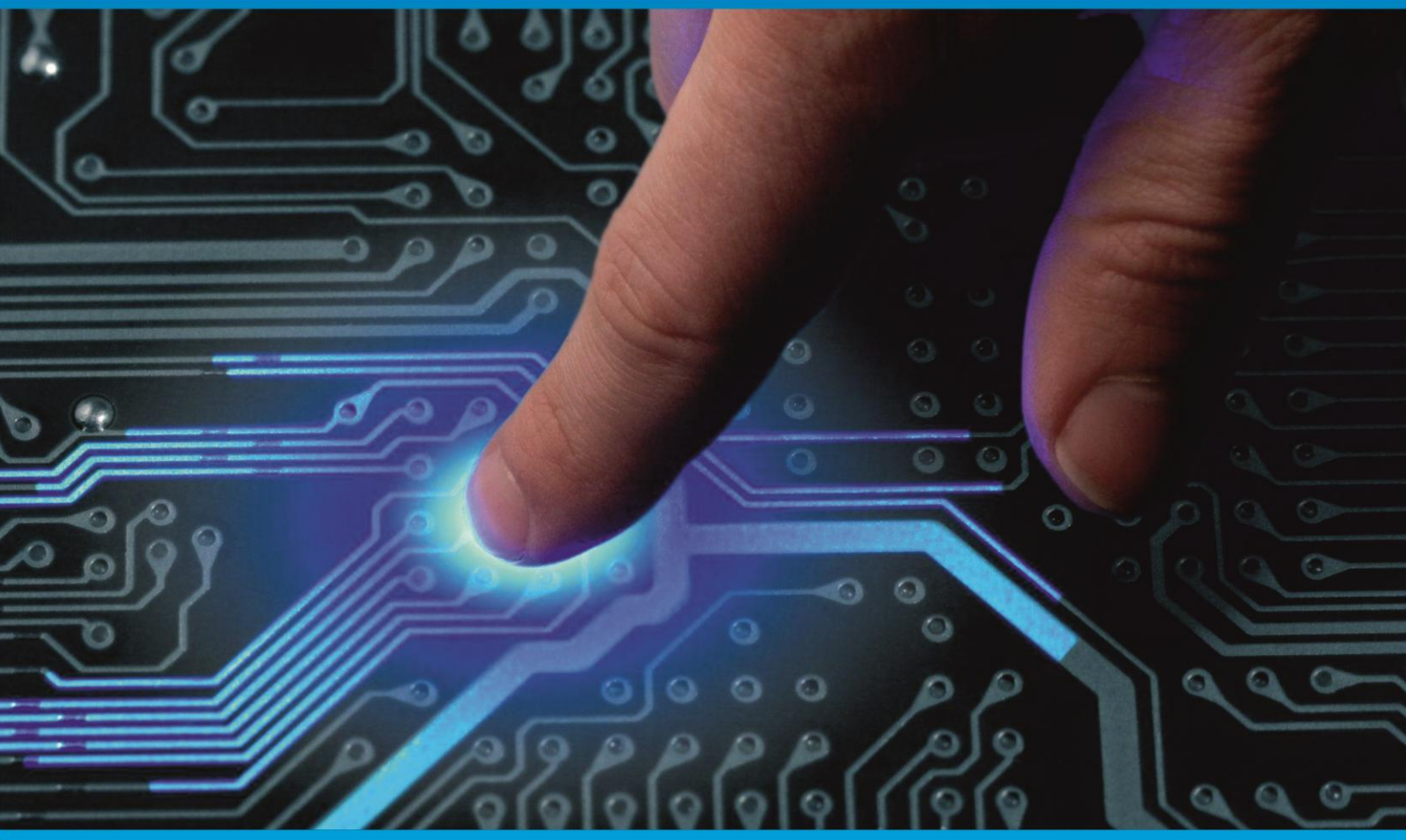

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Future Progress in Artifical Intelligence: Process and its Applications

S.Kannadhasan[1], Dr.R.Nagarajan[2], M.Shanmuganantham[3], S.Deepa[4]

Assistant Professor, Department of Electronics and Communication Engineering, Cheran College of Engineering, Karur, Tamilnadu, India[1]

Professor, Department of Electrical and Electronics Engineering, Gnanamani College of Technology, Namakkal, Tamlinadu, India[2]

Vice Principal, Department of Electrical and Electronics Engineering, Tamilnadu Government Polytechnic College, Madurai, Tamilnadu, India[3]

Teacher, Department of Computer Science, Nagasiva Vidyalaya CBSE School, Madurai, Tamilnadu, India[4]

ABSTRACT: This paper provides a brief overview of AI and its specific emerging applications, along with examples from real time. Artificial Intelligence (AI) is nowadays an evolving technology. Now and then most of the world's stuff can be using AI. The capacity of a computer to take its own decisions is called AI. This paper provides a general study on AI. Intelligence is the manner in which we think and act upon the world. It could depend on a person's Intelligent Quotient (IQ). AI can even be used to make potential predictions.

KEYWORDS: AI, AI Threats, AI Applications

I. INTRODUCTION

This paper provides an summary of the Artificial Intelligence and its human-life applications. This will explore the current use of Artificial Intelligence technologies in Network Intrusion for protecting computer and communication networks from intruders, in the medical area-medicine, to improve hospital inpatient care, for medical image classification, in the accounting databases to mitigate the problems of it, in the computer games, and in Advertising [1]-[5]. It will also show the principle of artificial intelligence, and how they applied to traffic signal control, how they actually solve some traffic problem. This paper provides an introduction to an RBF neural network-based self-learning system and how the system can simulate the experience of the traffic police. This paper focuses on how to determine the control effect with traffic shift and modify the signal with the different Artificial Intelligence techniques [6]-[14].

AI is an area of computer science, whereas AI once again contains many subdisciplines or branches that deal specifically with the topic. These areas range from artificial vision to expert [15]-[20] systems. They are as follows:

A) Natural Language Processing (NLP)
B) Knowledge Representation and Reasoning (KRR)
C) Pattern Recognition (PR)
D) Machine Learning (ML)
E) Artificial Neural Networks (ANN)

II. PROCESS OF ARTIFICIAL INTELLIGENCE

NLP is the method of understanding human language and translating it into a shape comprehensible to machine. Speech recognition in smartphones, for example, can understand the human language and process the information according to our requirement. KRR is used in machine comprehensible form to represent knowledge to complete a particular function. Intelligence means information which is gained and stored in a foundation of knowledge which is used to make decisions on its own. PR is the process whereby individual data are grouped into various groups based on their common attributes. There are, example two distinct groups A and B. Assume a new data point X, and it must now be classified whether it belongs to either class A or class B based on data point X attributes. The following diagram exemplifies pattern recognition. ML deals with researching, evaluating and developing algorithms to construct

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a computer for learning how to make decisions on its own. Input as past data is used by ML algorithms i.e., explicitly named as training data. For example, making an autonomous car which can use past data to take directions on its own.

ANN is developed using biological neuron inspiration which is how a human brain works. It mainly includes layer of inputs, layer of secret and layer of outputs. Whereas all these layers help in the cycle of thought. Training data is taken input layer, then ANN is trained with it, and prediction can now be made from the constructed model. ANN is a scientific model which consists of an interconnected set of falsified neurons that forms the data. In IDS, ANN is used to view complex relations between sources and yields of information or to discover knowledge designs. In this a neuron figures the whole by the contribution by weight and an edge applies.

For the outline of an intrusion detection system, Artificial Neural Networks and Fuzzy Inference System They used SNORT to conduct ongoing activity analysis and parcel signing on IP agreement during the structure planning phase. They developed a database of mark design using the methods of Protocol Analysis and Neuro-Fuzzy learning. At that point, they tried and accepted the models using rudimentary information from the 1998 DARPA Intrusion Detection Evaluation Data and TCP dump. The knowledge set comprises 24 compositions of the attack. The assaults viz. fall into four main classes. Application Foreswearing (DOS), Remote to User (R2L), User to Root (U2R), and Seek. From the results, the Fuzzy Inference System was shown to be faster in preparing, taking a few moments, than the Artificial Neural Networks which took a few minutes to join in. The two methods ended up being great for the most part, though with the Fuzzy Inference System having an edge over Artificial Neural Networks with its higher-order precision. Their trial also showed the importance of variable choice, as the two procedures were more egregious when each of the variables was used without determination.

III. ARTIFICIAL INTELLIGENCE THREATS

Natural language processing is the ability of machines to understand human language. AI program with the ability to recognize speech and understand natural language is also capable of understanding every email and telephone conversation between users. It can include user privacy. Algorithms can now analyze financial data and have accounts prepared. Insurance brokers and insurance firms can also use machine learning and big data to run computers. Many risks to national protection and human dignity.

Electronic commerce, or e-commerce, may be defined as the Internet purchasing and sale of goods and services. E-Business is another term that is often used for e-commerce instead. E-commerce sites include flip kart, eBay, infibeam.com etc. E-Commerce offers exclusive non-cash payment features, 24x7 Service quality and increased sales.

Following are some e-commerce models:

1. Business-to- Business (B2B)
2. Business-to- Consumer (B2C)
3. Consumer-to- Business (C2B)
4. Consumer-to-Consumer (C2C)
5. Government-to- Business (G2B)
6. Government-to- Citizen (G2C)

IV. APPLICATIONS OF AI

There is wide range of applications where AI is used in today's world. AI can be used in various fields. They are

1. Military Applications
2. Medicinal Applications
3. Space Applications
4. Industrial Applications
5. Telecommunication Applications

Some robots work autonomously or remotely controlled and are designed specifically for military applications. A number of leaders connected to the military are currently studying these intelligent systems. Remarkable performance has already been achieved with unmanned aerial vehicles (UAVs) such as the hunter, capable of taking surveillance photographs and even firing pilotless missiles at ground targets accurately. A subset of these is unmanned aerial fighting aircraft, equipped to carry out military strike missions. The future military forces will use robotic multi-agent workforce for identification and control, logistics and support, communications networks, forward-deployed offensive operations, and as tactical decoys to conceal manned asset manoeuvring. The techniques used in cutting-edge medical robotics today. We provide healthcare organisations, medical professionals, small businesses and educational institutions with our expertise.

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In the last few years our Solar System discovery has included more orbiters and rovers than human astronauts. In the future this trend will continue and that is why we need more 'intelligent' or autonomous robots. But, of course, sophisticated on-board software must monitor those robots. The way we explore certain planets and moons that have an atmosphere could be changed by planetary aerobots. Robots are used in a large variety of industries. The earliest uses were for handling tools, spot welding, and spray painting. Initially, robots were developed to perform specific tasks that are too hot, heavy and dangerous such as die casting, forging, spot welding and so on. In the field of telecommunication, AI can be used where appropriate for automation purposes. For example, modification of certain enodeB parameters can be done using deep learning with neural networks. For the future, AI can be used anywhere human need exists. With that cost will be reduced. Robots are currently used mainly in industries for performing certain tasks. Robotics is a field of engineering which uses AI techniques to create smart robots for efficiency purposes. Robotics and AI research would lead to Robots being manufactured that will be used in all industries.

Evolutionary calculation is the general term for a few numerical techniques in view of the universal cycle of development that imitates the method of collective choice and survival of the most fit to take care of certifiable problems. For restorative applications the most commonly used form of developmental calculation is "Genetic Algorithms." In view of the characteristic natural progression, hereditary algorithms are the most commonly used type of developmental calculation for restorative applications. Hereditary calculation standards were used to anticipate results in patients basically sick. Furthermore, X-ray division of mind tumours to gage the efficacy of treatment interventions is achieved by revolutionary calculation. Additionally, they were used as part of the modernized mammographic miniaturized scale calcification test.

One of the most successful applications of AI was the therapeutic option of emotionally supportive networks (CDSS), which focused mainly on the interpretation of a patient's condition provided its indications and statistical evidence. Mycin was developed in 1970 under CDSS designed for medicinal discovery, a lead-based master system for identifying microscopic organisms that cause contamination and recommending anti-toxin treatment of such contaminations. Pathfinder which used Bayesian systems to help pathologists analyze lymph-hub diseases more accurately.

For biomedical image processing, artificial intelligence methods are used for the diagnostic sciences. Model-based smart analysis a decision-supporting tool is critical for computer-assisted diagnosis and evaluation in medical imaging. CAD allows radiologists who use the performance of a computerized medical image analysis as a second opinion to identify lesions, determine disease severity and increase the precision and quality of radiological diagnosis to minimize the incidence of false negative cases.

V. CONCLUSION

Artificial Intelligence (AI) has revolutionized information technology. AI is a computer science subfield that involves the development of intelligent machines and software that functions and responds like humans. AI and its Applications are used as an expert framework in various fields of human life to solve complex problems in different fields such as science, engineering, industry , medicine, video games and advertisement. You can do all of the knowledge by programming. Learning is one of the parts of AI which allows a machine to learn and then use past experience to act on real-time situations. AI helps people do their homework quickly and effectively. There is huge difference on Natural Intelligence (NI), Machine Intelligence (MI) and AI. There is wide range of applications for AI that ranges from computer vision to expert systems.

REFERENCES

1. AAAI 1994. Improving Instruction of Introductory Artificial Intelligence, in: Proceedings of the 1994 AAAI Fall Symposium,
2. Menlo Park, CA.: AAAI Press. AAAI 2008. AI Education Colloquium, in Proceedings of the
3. 2008 AAAI Conference, Menlo Park, CA.: AAAI Press.
4. AITopics 2015. http://www.aitopics.org
5. Hearst, M. 1994. Preface: Improving Instruction of Introductory AI. in: Proceedings of the 1994 AAAI Fall Symposium, Menlo
6. Park, CA.: AAAI Press. Luger, G. 2009. Artificial Intelligence, 6th Ed., Boston, MA.:
7. Addison-Wesley. Russell, S., and Norvig, P. 2010. Artificial Intelligence, 3rd Ed.,Upper Saddle River, NJ.: Prentice Hall.
8. T. Mitchell, W. Cohen, E. Hruschka, P. Talukdar, J. Betteridge, A. Carlson, B. Dalvi, M. Gardner, B. Kisiel, J. Krishnamurthy, N. Lao, K.

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9. Mazaitis, T. Mohamed, N. Nakashole, E. Platanios,A. Ritter, M. Samadi, B. Settles, R. Wang, D. Wijaya, A. Gupta, X. Chen, A. Saparov,M.
10. Greaves, J. Welling, Never-Ending Learning, Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence, 2014
11. Pedregosa et al.,Scikit-learn: Machine Learning in Python, JMLR 12, pp. 2825-2830, 2011.
12. Wang, J. and Jebara, T. and Chang, S.-F. Semi-supervised learning using greedy max- cut.Journal of Machine Learning Research , Volume 14(1), 771-800 2013
13. Chapelle, O. and Sindhwani, V. and Keerthi, S. S. Optimization Techniques for Semi- Supervised Support Vector Machines, Journal of Machine Learning Research , Volume 9, 203–233, 2013
14. J. Baxter. A model of inductive bias learning. Journal of Artificial Intelligence Research, 12:149–198, 2000.
15. S. Ben-David and R. Schuller. Exploiting task relatedness for multiple task learning. In Conference on Learning Theory, 2003.
16. W. Dai, G. Xue, Q. Yang, and Y. Yu, Transferring Naive Bayes classifiers for text classification.AAAI Conference on Artificial Intelligence, 2007
17. Dheeraj Kapoor, R. K. Gupta," Software Cost Estimation using Artificial Intelligence Technique" International Journal of Research and Development in Applied Science and Engineering (IJRDASE), Volume 9, Issue 1, February 2016
18. Mausami Sahu, "Plagiarism Detection Using Artificial Intelligence" International Journal of Scientific & Technology Research, Volume 5, Issue 04, April 2016
19. Ashish, A.Dongare, Prof.R.D. Ghongade, "Artificial Intelligence Based Bank Cheque Signature Verification System" International Research Journal of Engineering and Technology (IRJET) Volume 03, Issue 01, Jan-2016
20. Siddharth Gupta, Deep Borkar, Chevelyn De Mello, Saurabh Patil, "An E-Commerce Website based Chabot" International Journal of Computer Science and Information Technologies (IJCSIT), Vol. 6 (2), 2015

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