e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
( Peer-Reviewed, Open Access, Fully Refereed International Journal )
Volume:04/Issue:04/April-2022 Impact Factor- 6.752 www.irjmets.com

# A REVIEW ON ARTIFICIAL INTELLIGENCE IN CYBER SECURITY

**Chetan Vijaykumar Dalave*1, Tushar Dalave*2**

*1Dept.Of Computer Engineering Savitribai Phule Pune University, RMD Sinhgad College Of Engineering Pune, Maharashtra, India.

*2Dept.Of Information Technology Engineering Savitribai Phule Pune University, Of Engineering Pune, Maharashtra, India.

## ABSTRACT

There are a wide variety of interdisciplinary approaches to cybersecurity and artificial intelligence. Experiments (AI) aside, in cybersecurity, AI technologies, such as deep learning can be applied to create smart models for implementing malware. Rating and detection of intrusive and threatening intelligence sensing to combat anti-machine learning, maintaining confidentiality in machine learning, Secure federated learning, etc., AI models require unique cybersecurity defense. Security Technologies We study each other based on AI and cybersecurity. On the above two factors. This article provides details about techniques, benefits. And the disadvantages of artificial intelligence in cybersecurity.

**Keywords:** Threats, Security, Cyber Security, Artificial Intelligence, Blockchain.

## I. INTRODUCTION

Cyber security is growing and improving day by day. Risks to global businesses can be minimized. Integration of artificial intelligence into cyber Security systems. Machine learning and artificial intelligence (AI) is being further integrated. Widely crosswise across industries and applications Compared to any other time in recent memory as computing Increase power, storage capacity, and data collection. This vast amount of information cannot be worked out Slowly by the people. And with machine learning AI, this peak of data can be cut into fractions. Of time, which helps to identify the enterprise and Security risk recovery.

## II. FUNCTION OF ARTIFICIAL INTELLIGENCE IN CYBER SECURITY

**A. Artificial Intelligence:** Artificial intelligence is a technique of manufacturing computers, Computer-controlled robots, or software think tanks Intelligently, absolutely intelligent Man thinks. How is AI studied the human mind thinks, and how man learns, decides, and works on trying to solve a problem, and then Using the results of this study as a basis Develop intelligent software and systems. Intelligence is generally considered a qualification. Gathering knowledge and reasoning about knowledge Solve complex problems**.** Intelligent in the near upcoming future Machines will replace human capabilities in many people.

**B. The emergence of AI in cyber security:** Machine learning and artificial intelligence (AI). More comprehensively connected crosswise. More on enterprises and applications than ever before Information as registering power in recent memory Increase accumulation and capacity building. This A great store of information is important. For AI, which can process and test everything of Cyber Security, it means new efforts and Shortcomings can be quickly identified. Further attacks were investigated to help moderate. it can be Take a portion of the weight from human safety." partner." They are alerted when activity occurs. Need, yet can invest their energy, in addition, Taking a more innovative, productive shot Steps. In case you Use this star representative for your preparation. With machine learning and artificial intelligence programs, AI will be as smart as your star worker. For now, if you put it aside. Opportunity to develop your own machine learning with your 10 best artificial intelligence programs Representatives, as a result, will have an answer Here's how to put one together for use with your top 10 workers. Furthermore, AI never takes a day off.

**C. Where Can Artificial Intelligence Be Used in Cyber security:** Artificial Intelligence (AI) is already being used or actively searching for some of them. The following areas in cybersecurity solutions: Identify and prevent unwanted spam and fraud Emails, Gmail uses artificial intelligence (AI). Gmail Artificial Intelligence was taught. Millions of existing Gmail users - users every time Click on the email message or not spam, you are helping. Training AI to detect future spam. Like As a result, artificial intelligence has evolved. Points where it can detect even the most subtle spam. Emails that try to go unnoticed as "repeated "Emails.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
( Peer-Reviewed, Open Access, Fully Refereed International Journal )
Volume:04/Issue:04/April-2022 Impact Factor- 6.752 www.irjmets.com

**D. Fraud detection:** based on artificial intelligence Fraud detection system that works algorithmically. On consumer habits expected to identify fraud Decision to make a transaction through MasterCard intelligence. It checks the customer's routine. Purchase pattern, seller, location Transactions, and many other complex algorithms Determine if the purchase is unusual.

**E. Botnet Detection:** A Very Complex Area, Boot Net Detection is usually based on pattern identification. Timing analysis of proxy servers. Since there are botnets. The instructions are usually managed by a master script, a Large-scale botnet attacks will usually involve a major one. A number of "users" ask the same questions. One site in one attack. This can include failure. Login attempts (botnet brute force password attack), Network threat scans, and other breaches. it is Incredibly complex it is very difficult to explain. The function that artificial intelligence plays in the boot net. Identity in just a few words, but here's one Excellent reading article on this topic which does a very well Job.

**F. Benefits of AI in Cyber Security:** An Overview of the Benefits of Artificial Intelligence Institutions in the field of cyber security. Which implemented AI in the sense of cyber security. Significant benefits. This is as clear as the ROI of the two. Three organizations on cyber security grew Tools. For example, Siemens AG, Global Leader Electrification, automation, and digitization are used. Amazon Web Services (AWS) to enhance AI-based Speed, self-control, and a highly flexible platform for its Siemens Cyber Defense Center (CDC). AI The deployment was capable of estimating a capacity of 60,000. Attack time per unit. As a result of AI deployment, this capability was managed with a team consisting of Less than a dozen members without any negatives Effect on system performance. Employing AI Allows cyber security agencies to understand and Re-apply the risk patterns in novel identification. Threats result in time and effort savings. In identifying and investigating incidents, about 64% of administrators report redress threats. That reduces the cost of identifying and responding to AI. Violations require swift response to avoid cyber-attacks. Cost reduction for organizations is within one. 12% on average. AI provides opportunities for cyber. Security is largely due to the cyber security landscape Identity is moving faster than manual. Automatic response and mitigation Reduction AI can identify novel and complex. Edit attack extension.

**G. The disadvantages of Artificial Intelligence in cyber security:**

1. **Cybercriminals are aware of AI:** AI information is open to everyone so cybercriminals can catch up soon. Cybersecurity solutions are created by AI and used to exploit malware. They can Create malicious, AI-proof systems that can infiltrate websites and organizations in more efficient ways**.**
2. **AI Is Still Expensive:** As a result of data science and big data, artificial intelligence is on the rise. This makes it almost inaccessible to marketers or difficult to find in this area. Because there aren't many AI solutions for cybersecurity, many businesses are at risk to spend more.
3. **Cyberthreats evolve:** This doesn't mean that you should incontinently come resistant to all the trouble, indeed if you add them. AI to your company. Infection and malware are constantly perfecting, and indeed AI. Systems need constant overhaul improvement and conversation.

## III. CONCLUSION

So in this article, we looked at the importance of artificial Cyber security and various intelligence Problems that come with it and how they can do it. To be minimized. Although there are some drawbacks, Artificial intelligence still plays an important role. Cyber Security. To overcome errors, Artificial intelligence will help advance cyber security.

## IV. REFERENCES

[1] Abeykoon I. and Feng X. (2019) “Challenges in ROS Forensics”, IEEE International Workshop ACE-2019.

[2] Ali. J. and Dyo, V. (2020) “Practical Hash-based Anonymity for MAC Addresses”. The 17th International Conference on Security and Cryptography

[3] Arockia Panimalar.S, Giri Pai.U, Salman Khan.K, “ARTIFICIAL INTELLIGENCE TECHNIQUES FOR CYBER SECURITY”, International Research Journal of Engineering and Technology (IRJET), Volume: 05 Issue: 03 | Mar-2018, e-ISSN: 2395-0056, p-ISSN: 2395- 0072

[4] Rajneesh Kumar, “Artificial Intelligence : A Path to Innovation”, International Journal of Scientific Research in Science and Technology (IJSRST), 2017 IJSRST | Volume 3 | Issue 1 | Print ISSN: 2395-6011 | Online ISSN: 2395- 602X.

[5] Jagadeeshwar Podishetti and Kadapala Anjaiah, "Role of Artificial Intelligence in Cyber Security", International Journal of Research in Advanced Computer Science Engineering, Volume No:3, Issue No:3 (August-2017), ISSN No : 2454-423X (Online).

[6] Ishaq Azhar Mohammed, "ARTIFICIAL INTELLIGENCE FOR CYBERSECURITY: A SYSTEMATIC MAPPING OF LITERATURE", INTERNATIONAL JOURNAL OF INNOVATIONS IN ENGINEERING RESEARCH AND TECHNOLOGY [IJIERT], VOLUME 7, ISSUE 9, Sep.-2020, ISSN: 2394- 3696.

[7] Shidawa Baba Atiku, Achi Unimke Aaron, Goteng Kuwunidi Job, Fatima Shittu and Ismail Zahraddeen Yakubu, "Survey On The Applications Of Artificial Intelligence In Cyber Security", INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 10, OCTOBER 2020, ISSN 2277-8616

[8] Conquering the Cyber Attacks: Analysis and Protecting the Enterprise Resources by Emmanuel U Opara College of Business Prairie View AM University and Ahmed Y. Mahfouz College of Business Prairie View AM University

[9] Cyber security meets artificial intelligence: a survey https://link.springer.com/article/10.1631.

[10] Smart Contract Privacy Protection Using AI in CyberPhysical Systems: Tools, Techniques and Challenges https://ieeexplore.ieee.org/abstract/document/8976143

[11] M. Mathieu, M. Henaff, Y. LeCun, Fast training of convolutional networks through ffts, in: Proceedings of the International Conference on Learning Representations (ICLR), 2014.

[12] MohammadpourL, HussainM, Aryanfar A, Raee VM, SattarF. ''Evaluating performance of intrusion detection system using support vector machines,'' International Journal of Security and Its Applications. 2015 Sep;9(9):225–3 4. Cross ref .