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Cyber Crime Prevention Model Using Artificial Intelligence

Dr. Laxmi Shankar Awasthi[1], Dr. Anand Kumar Rai[2*], Dr. Karuna Shankar Awasthi[2], Dr. Santosh Kumar[3], Dr. Amit Kumar Bajpai[4], Mr. Himanshu Pathak[5]

[1]Professor, Department of Computer Science, Lucknow Public College of Professional Studies, Lucknow, Uttar Pradesh, India

[2]Associate Professor, Department of Computer Science, Lucknow Public College of Professional Studies, Lucknow, Uttar Pradesh, India

[3]Professor, Department of Computer Science, University with City and state: ERA University, Lucknow, Uttar Pradesh, India.

[4]DGM, UPTECH Computer Consultancy Ltd., Lucknow, Uttar Pradesh, India

[5]Senior Programmer, Integral University, Lucknow, Uttar Pradesh, India

***Corresponding Author:** Dr Anand Kumar Rai

*Associate Professor, Department of Computer Science, Lucknow Public College of Professional Studies, Lucknow, Uttar Pradesh, India,

KEYWORDS

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ABSTRACT:

The Cyber Crime Prevention Model using Artificial Intelligence (AI) is a framework designed to help prevent and mitigate the impact of cybercrime. The model integrates AI technology into the cyber security measures and processes to identify, prevent, and respond to cyber threats. AI algorithms are used to analyze large amounts of data to detect patterns and anomalies, which can indicate potential security breaches. The model also includes features such as automated threat response and real-time monitoring, which can improve incident response times and reduce the impact of cyber-attacks. Additionally, the model incorporates ethical considerations and human oversight to ensure that the AI-powered system operates in a responsible and transparent manner. Overall, the Cyber Crime Prevention Model using AI can provide organizations with a more proactive and effective approach to cyber security.

1. Introduction

Cybercrime is any illegal or criminal activity that involves a computer, network, or internet connection. Examples include hacking, identity theft, cyber stalking, cyber bullying, financial fraud, and the spread of malware or viruses. Cybercrime can cause significant harm to individuals, businesses, and governments.

Cybercrime refers to a range of illegal activities that are committed using the internet or other forms of digital communication. These crimes can take many different forms and can have serious consequences for victims, including financial losses, damage to reputation, and emotional trauma. Some common types of cybercrime include [1]:

(i) Hacking: unauthorized access to a computer system or network to steal sensitive information or cause harm.

(ii) Identity theft: the unauthorized use of another person's personal information, such as their Social Security number or credit card information, to commit fraud.

(iii) Cyber stalking: using the internet or other digital means to harass, intimidate, or threaten someone.

(iv) Cyber bullying: using digital means to harass, humiliate, or threaten someone, often a minor.

(v) Financial fraud: using the internet or digital communication to defraud people of their money, such as through phishing scams or fake investment schemes.

(vi) Malware and virus attacks: the spread of harmful software programs, such as viruses and ransom ware, that can damage computers or steal sensitive information.

Cybercrime is a rapidly evolving area of crime that presents new challenges for law enforcement and society as a whole. The anonymity of the internet and the global reach of digital communication make it easier for criminals to commit cybercrime and harder for authorities to track them down [2][3][6].

1.1 Classification of Cybercrime

Cybercrime can be classified into several categories, based on the type of crime being committed or the

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JCHR (2023) 13(4s), 814-822 | ISSN:2251-6727

types of victims targeted. Some common categories of cybercrime include [4]:

(i) Financial Crimes: This category of cybercrime involves using the internet or other digital communication methods to steal money or commit financial fraud. Examples include phishing scams, credit card fraud, and investment scams.

(ii) Intellectual Property Crimes: This type of cybercrime involves the unauthorized use, copying, or distribution of someone else's intellectual property, such as software, music, or videos.

(iii) Cyberstalking and Harassment: This category of cybercrime involves the use of digital communication to harass, intimidate, or threaten someone. Examples include online bullying and cyberstalking.

(iv) Hacking and Unauthorized Access: This type of cybercrime involves breaking into computer systems or networks without permission to steal data or cause harm.

(v) Identity Theft and Fraud: This category of cybercrime involves the unauthorized use of someone else's personal information to commit fraud or impersonate someone else online.

(vi) Distribution of Malicious Software: This type of cybercrime involves the spread of malware, such as viruses and Trojans, to cause harm to computer systems or steal sensitive information.

(vii) Online Child Exploitation: This category of cybercrime involves the use of digital communication to exploit children, such as through the distribution of child pornography.

This classification of cybercrime is not exhaustive, and new forms of cybercrime are constantly emerging as technology evolves. However, these categories provide a general overview of the types of cybercrime that exist and can help individuals and organizations to better understand the risks and take steps to prevent cybercrime[7].

1.3 Challenges of Cyber Crime

There are several challenges associated with combating cybercrime[3]:

(i) Technical Complexity: Cybercrime often involves highly sophisticated techniques, making it difficult for law enforcement agencies and other organizations to investigate and prevent.

(ii) Lack of Awareness: Many individuals and organizations are not aware of the risks associated with cybercrime, making them more vulnerable to attacks.

(iii) Difficulty in Proving Criminal Intent: In many cases, it can be difficult to prove that a cybercrime was committed with criminal intent, which can make it challenging to prosecute cyber criminals.

(iv) Global Nature of the Threat: Cybercrime knows no boundaries, and criminals can operate from anywhere in the world, making it difficult for law enforcement agencies to cooperate and coordinate their efforts.

(v) Rapidly Evolving Threats: The threat landscape is constantly changing, with new forms of cybercrime emerging as technology evolves. This requires law enforcement agencies and other organizations to stay up-to-date on the latest threats and respond quickly to new risks.

(vi) Limited Resources: Many law enforcement agencies and organizations lack the resources and funding necessary to effectively investigate and prevent cybercrime.

(vii) Inadequate Legal Frameworks: Many countries have outdated or inadequate legal frameworks for dealing with cybercrime, which can make it difficult to prosecute cyber criminals or compensate victims.

(viii) Privacy Concerns: Efforts to prevent and investigate cybercrime can sometimes conflict with privacy rights, making it difficult to balance the need for security with the need to protect individual rights.

Addressing these challenges requires a multi-faceted approach that involves cooperation between law enforcement agencies, private organizations, and international partners, as well as investment in technology, education, and legal frameworks to combat cybercrime effectively.

Cybercrime prevention means taking measures to reduce the risk of being a victim of cybercrime. This includes implementing various technical, administrative, and physical controls to secure computer systems and networks, as well as raising awareness about safe online practices and educating people about the dangers of cybercrime. Effective cybercrime prevention measures can help individuals, businesses, and governments to protect their sensitive information, financial assets, and reputation from cyber criminals. In this paper new mechanism will be introduced which will reduce risk of cybercrime[2][4].

2. Background

There has been a significant amount of research on cybercrime and its prevention in recent years, as the threat of cyber-attacks continues to grow. Some of the key areas of research in this field include:

(i) Technical Solutions: Researchers have been developing and evaluating technical solutions to prevent and respond to cybercrime, such as firewalls, intrusion detection systems, and encryption algorithms.

(ii) User Awareness and Education: Researchers have studied the impact of user education and awareness programs on reducing the risk of cybercrime, and have developed best practices for

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JCHR (2023) 13(4s), 814-822 | ISSN:2251-6727

effectively communicating the risks and how to avoid them.

(iii) Legal and Policy Issues: Researchers have studied the legal and policy issues associated with cybercrime, and have advocated for better international cooperation and harmonization of legal frameworks to more effectively combat cybercrime.

(iv) Economic Impacts: Researchers have studied the economic impacts of cybercrime, including the costs to businesses and governments, and have developed strategies for mitigating these impacts.

(v) Organizational Responses: Researchers have studied the organizational responses to cybercrime, including incident response plans, crisis management strategies, and the development of cybersecurity frameworks.

(vi) Criminology and Sociology: Researchers have applied criminological and sociological theories to better understand the motivations and behaviour of cyber criminals, and to develop strategies for preventing and responding to cybercrime.

Figure 2. shows the increasing cybercrime graph in India during the year 2013-2020.

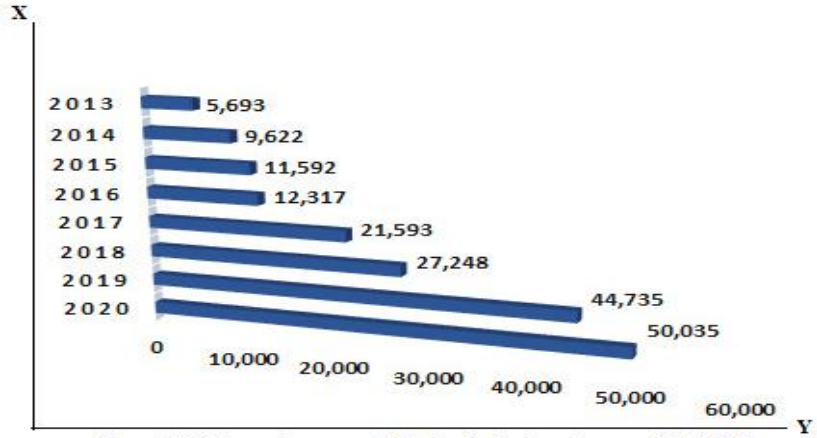

Figure 2. Cyber crime reported in india during the year 2013-2020

These research efforts have contributed to a better understanding of cybercrime and its prevention, and have informed the development of effective strategies for protecting against cyber-attacks. Ongoing research is necessary to continue to improve our ability to prevent and respond to cybercrime as the threat landscape evolves.

(Chen J., & Lin J., 2012) found that a multi-disciplinary approach is needed to address the issue of cybercrime, and that education and awareness programs, technical solutions, and legal measures can all play a role in preventing and controlling cybercrime [3].

(Kshetri N., 2012). analyzed the incidence and causes of corporate data breaches caused by insiders. The author found that the majority of data breaches were caused by employees with authorized access to sensitive information, and that the main reasons for these breaches were carelessness, malice, and financial gain. The author also found that technological solutions alone are not enough to prevent these types of breaches, and that a combination of technical, organizational, and legal measures is necessary [7].

(Staniford S. & et al, 2012) describe the architecture of a large-scale Web search engine and the challenges` associated with building and maintaining such an engine. The authors also describe various technical solutions that have been developed to address these challenges, including methods for indexing and ranking Web pages, and techniques for filtering out irrelevant or low-quality pages.

Karim and Ahmad's (2013) present a paper on "Cybercrime in Malaysia: Current status and future direction which provides an overview of the current status and future direction of cybercrime in Malaysia. The authors examine the types of cybercrime prevalent in Malaysia and the challenges faced by law enforcement agencies in combating cybercrime [8].

(Kshetri's, 2013) discusses the privacy concerns and trust issues in the adoption of cloud computing. The author presents a model for privacy protection in cloud computing and analyzes the role of privacy-enhancing technologies and security measures in increasing privacy and trust in cloud computing [9].

(Chen & Huang's 2015) provides a systematic review of the existing literature on the prevention of cybercrime through technology and education. The authors identify the key factors that contribute to the effectiveness of technology-based and education-based prevention strategies [4].

(Kim & Lee's, 2015) presents a framework for preventing cybercrime and provides an empirical study

Journal of Chemical Health Risks

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JCHR (2023) 13(4s), 814-822 | ISSN:2251-6727

to evaluate its effectiveness. The authors develop a framework that integrates various technical, organizational, and legal measures for preventing cybercrime and analyze its effectiveness using a sample of organizations [10].

(Bhatia & Kumar's, 2015) examine the various types of cybercrime, including cyberbullying, cyberstalking, identity theft, and cyber fraud, and provide a comprehensive review of the existing laws and regulations for combating cybercrime [1].

(Wang, et al, 2016) examine the various types of cybercrime in the cloud, including cloud-based cyberattacks, data breaches, and identity theft, and provide insights into the challenges faced by organizations in preventing cybercrime in the cloud [17].

(D'Ovidio & Poggi's, 2016) analyse the various types of cybercrime that affect businesses, including cyber-attacks, data breaches, and identity theft, and examine the impact of cybercrime on business operations, reputation, and financial performance [5].

(Kshetri, 2016) explored the issue of managing cyber risks in small and medium enterprises (SMEs) and found that SMEs often face significant challenges in protecting themselves against cybercrime due to limited resources. The study provides recommendations for SMEs to improve their cyber risk management [11].

(Kshetri, 2017) conducted an empirical study on cybercrime and the protection of personal information. The study found that individuals and organizations often face privacy concerns in the digital world and concluded that the development of privacy-enhancing technologies and privacy policies can help mitigate privacy risks associated with cybercrime [12].

(Zia & Jan, 2018) present a comprehensive study of cybercrime and its impact on businesses. The study found that businesses face numerous cyber threats and that cybercrime can lead to significant financial losses and damage to reputation. The study also provides recommendations for businesses to better protect themselves against cybercrime [18].

(Dhillon & Lee, 2018) studied the impact of cybercrime on individuals and society. The study found that cybercrime can have a range of negative consequences, including financial losses, harm to reputation, and privacy violations. The study also highlights the importance of developing effective strategies to prevent and respond to cybercrime [6].

(Bhatia & Kumar, 2018) reviewed the literature on cybercrime and its prevention. The authors found that cybercrime is a growing problem and that it is essential to have robust technical, legal, and organizational measures in place to prevent cybercrime and protect individuals and organizations from its impacts [7].

(Chen & Huang, 2019) conducted a systematic review of the literature on cybercrime prevention through technology and education. The authors found that technology and education play a critical role in preventing cybercrime and that a multi-layered approach that combines technology, education, and legal measures is necessary for effective cybercrime prevention [4].

(Kim & Lee, 2019) conducted an empirical study to develop a framework for preventing cybercrime. The study found that a comprehensive approach to preventing cybercrime should include technical, organizational, and legal measures [14].

(Kshetri, 2019) conducted an empirical study to examine the impact of cybercrime on small and medium-sized enterprises (SMEs). The study found that cybercrime has a negative impact on the financial performance and reputation of SMEs, and that SMEs need to take proactive measures to protect against cybercrime [13].

(Kshetri, 2020) conducted an empirical study to examine the relationship between cybercrime and personal data protection. The study found that individuals' personal information is vulnerable to cybercrime, and that organizations need to take measures to protect this information [15].

3. Existing Cyber Crime Prevention models and their drawbacks

Cybercrime prevention models aim to prevent and mitigate the risk of cybercrime by implementing a set of measures and techniques designed to detect and prevent unauthorized access, use, disclosure, disruption, modification, or destruction of information. These models typically use a combination of technical and non-technical approaches, including security technologies, security policies and procedures, user education and training, and incident response planning. The ultimate goal of these models is to protect organizations and individuals from the financial, reputational, and legal harm that can result from cybercrime. Few are given here:

1. Data Loss Prevention (DLP)
2. Intrusion Detection and Prevention Systems (IDPS)
3. Firewalls
4. Antivirus Software
5. Virtual Private Networks (VPN)
6. Access Control Models
7. Encryption
8. Two-Factor Authentication
9. Biometric Authentication
10. Cyber Threat Intelligence (CTI)
11. Network Segmentation
12. User Awareness Training
13. Disaster Recovery and Business Continuity Planning

Journal of Chemical Health Risks

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JCHR (2023) 13(4s), 814-822 | ISSN:2251-6727

14. Penetration Testing
15. Endpoint Security Solutions.

3.1 Data Loss Prevention (DLP): DLP is a technology solution aimed at preventing sensitive data from being leaked or stolen. It accomplishes this by monitoring, detecting and blocking the unauthorized transfer of confidential information.

Drawbacks:

a) DLP solutions can be complex to implement and manage.
b) DLP solutions can cause false alarms and slow down network traffic, causing productivity losses.
c) DLP solutions can be bypassed by determined attackers.
d) DLP solutions can be costly.
e) DLP solutions can be intrusive to users, impacting privacy and freedom of expression.
f) DLP solutions may be limited in their ability to recognize certain types of sensitive data, leading to false negatives.
g) DLP solutions may be limited in their ability to detect and block cloud-based data transfers, particularly when encryption is used.

3.2 Intrusion Detection and Prevention Systems (IDPS): IDPS is a security solution that aims to detect and prevent unauthorized access to a network or computer system.

Drawbacks:

a) IDPS can produce a large number of false alarms, making it difficult to distinguish between real threats and benign activity.
b) IDPS can be easily bypassed by attackers who use encryption or sophisticated techniques to evade detection.
c) IDPS can be resource-intensive and can slow down network performance.
d) IDPS may not be able to detect new or unknown threats.
e) IDPS may be limited in their ability to detect insider threats, such as employees who abuse their access privileges.
f) IDPS may not be compatible with all network configurations, making them difficult to deploy in some environments.
g) IDPS can be vulnerable to configuration errors, making it possible for attackers to bypass them.

3.3 Firewalls: Firewalls are a critical component of cybercrime prevention efforts. They work by controlling access to a network or computer system by filtering incoming and outgoing network traffic.

Drawbacks:

a) Firewalls can be bypassed by attackers who are able to manipulate network traffic or use encrypted communications.
b) Firewalls can be complex to configure and manage, particularly in large, complex network environments.
c) Firewalls can be resource-intensive and can slow down network performance.
d) Firewalls can be vulnerable to misconfiguration, making it possible for attackers to bypass them.
e) Firewalls may not be able to detect or prevent attacks that are launched from within the protected network.
f) Firewalls may be limited in their ability to protect against threats that are delivered via non-network channels, such as physical media.
g) Firewalls may not be able to provide adequate protection against modern, sophisticated cyber threats.

3.4 Antivirus Software: Antivirus software is designed to detect and remove malware from a computer system.

Drawbacks:

a) Antivirus software can be vulnerable to new, unknown malware, making it less effective against emerging threats.
b) Antivirus software can be resource-intensive and can slow down system performance.
c) Antivirus software can be bypassed by attackers who use encryption or other techniques to evade detection.
d) Antivirus software can be vulnerable to configuration errors, making it possible for attackers to bypass it.
e) Antivirus software can be costly, particularly for large organizations or those who require advanced features.
f) Antivirus software may not be compatible with all computer systems, making it difficult to deploy in some environments.
g) Antivirus software can generate false alarms, making it difficult to distinguish between real threats and benign activity.

3.5 Virtual Private Networks (VPN): A VPN is a private network that uses a public network (usually the internet) to connect remote sites or users together. The VPN uses "virtual" connections routed through the internet from the business's private network to the remote site or employee.

Drawbacks:

a) Limited bandwidth and speed.
b) Security vulnerabilities, if not properly configured.

Journal of Chemical Health Risks

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JCHR (2023) 13(4s), 814-822 | ISSN:2251-6727

c) Compatibility issues with some websites and online services.
d) Potential for data breaches or leaks.
e) Technical expertise required to set up and maintain.
f) Additional costs for hardware, software and subscriptions.
g) Possible restrictions imposed by internet service providers.

3.6 Access Control Models: Access control refers to the process of limiting access to a system or to physical or virtual resources. Access control models define the ways in which access control can be implemented and managed.

Drawbacks of Access Control Models:
a) Complex to design, implement and maintain.
b) Limited scalability, particularly for large organizations.
c) Can be bypassed if physical access to the system is obtained.
d) Limited to only one aspect of security.
e) Vulnerabilities due to human error or malicious insiders.
f) Dependent on the accuracy of user information and permissions.
g) May require frequent updates to adapt to changing needs and threats.

3.7 Encryption: Encryption is the process of converting plain text into a coded language to prevent unauthorized access or theft of sensitive information.
Drawbacks of Encryption:
a) Complexity of implementation and management.
b) Slows down communication or data processing.
c) Requires specialized knowledge and resources.
d) Vulnerabilities if encryption keys are lost or stolen.
e) Incompatible with some systems or devices.
f) Limits accessibility and usability for those without the necessary decryption keys.
g) Possible legal or governmental restrictions on encryption methods and usage.

3.8 Two-Factor Authentication: Two-Factor Authentication (2FA) adds an extra layer of security to user authentication by requiring two separate methods of identification.
Drawbacks of Two-Factor Authentication:
a) Adds additional time and effort to the login process.
b) Dependent on the availability of a second device for authentication.
c) Vulnerabilities if the second factor is lost or stolen.
d) Can be bypassed if the second factor is weak or easily accessible.
e) Limited compatibility with some systems or services.
f) Can increase cost for hardware or software needed for implementation.
g) Potential for user confusion or frustration with added security steps.

3.9 Biometric Authentication: Biometric authentication uses unique physical or behavioral characteristics of an individual, such as fingerprints or facial recognition, to verify their identity. **Drawbacks of Biometric Authentication:**
a) Privacy concerns with the collection and storage of biometric data.
b) Technical difficulties in accurately identifying individuals, particularly with some populations.
c) Vulnerabilities if biometric data is stolen or compromised.
d) Cost for hardware and software needed for implementation.
e) Limited compatibility with some systems or devices.
f) Bias or discrimination towards certain populations with inaccurate identification.
g) Dependent on the availability of a biometric reading device.
h) Possible legal or governmental restrictions on biometric data collection and usage.

3.10 Cyber Threat Intelligence (CTI): Cyber Threat Intelligence (CTI) is the process of collecting and analysing information about potential or actual cyber threats to protect against them.

Drawbacks of CTI
a) Requires a significant investment in time and resources to gather and analyse data.
b) Relies on the accuracy and timeliness of the intelligence collected.
c) Vulnerabilities if the intelligence is incomplete or outdated.
d) Limited ability to proactively prevent all threats.
e) Complexity in integrating CTI into existing security systems.
f) Dependent on the expertise of the CTI analysts.
g) Privacy concerns with the collection and use of threat data.
h) Potential for false positive alerts and false sense of security.

3.11 Network Segmentation: Network segmentation refers to the practice of dividing a computer network into smaller segments, each with its own security parameters, to improve overall network security.
Drawbacks of Network Segmentation:
a) Complex to design, implement and maintain.
b) Limited scalability, particularly for large networks.
c) Vulnerabilities if segmentation is not properly maintained.

Journal of Chemical Health Risks

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d) Dependent on the accuracy of security policies and permissions.
e) Can slow down communication or data processing.
f) Requires specialized knowledge and resources.
g) Limited ability to adapt to changing security needs and threats.
h) May increase costs for hardware and software.

3.12 User Awareness Training: User Awareness Training is a process of educating users about the dangers of cyber threats and how to properly protect against them.

Drawbacks of User Awareness Training

a) Limited effectiveness in changing user behaviour.
b) Requires frequent and ongoing training to stay current with changing threats.
c) Limited ability to prevent all threats, particularly if users ignore or disregard training.
d) Dependent on user participation and engagement in training.
e) Can be time-consuming and resource-intensive.
f) Potential for user confusion or frustration with added security measures.
g) May not address the root cause of security incidents.
h) Limited ability to adapt to changing security needs and threats.

4. Proposed Cyber Crime Prevention Model

(i) Data Collection: No specific formula is required for this component, as it involves simply collecting data from various sources such as network logs, system logs, and security logs.

(ii) Data Analysis: AI algorithms can be used to analyse the collected data to detect patterns and anomalies. For instance, anomaly detection algorithms could be used to identify any unusual transaction patterns. Here is an example formula for calculating the anomaly score for a given transaction:

Anomaly Score = p(x) / (p(x) + p(y))

Where p(x) is the probability density of the observed transaction, and p(y) is the probability density of the distribution of all transactions. A higher anomaly score indicates a higher likelihood of fraud.

(iii) Threat Detection: Machine learning algorithms can be used to detect and classify threats based on their severity and potential impact. For instance, a binary classification algorithm such as logistic regression could be used to classify transactions as either fraudulent or non-fraudulent. Here is an example formula for logistic regression:

$$P(Y=1|X=x) = 1 / (1 + \exp(-z))$$

Where P(Y=1|X=x) is the probability of the transaction being fraudulent given the transaction features X=x, and z is a linear function of the transaction features.

(iv) Automated Response: Once a threat is detected, the model triggers an automated response to mitigate the impact of the threat. For example, the system could block the transaction or disable the user account. No specific formula is required for this component, as it involves simply executing pre-defined responses based on the detected threat.

(v) Real-time Monitoring: No specific formula is required for this component, as it involves continuously monitoring the network and systems for any new threats or anomalies.

(vi) Ethical Considerations: The model incorporates ethical considerations and human oversight to ensure that the AI-powered system operates in a responsible and transparent manner. The system is designed to operate within legal and ethical boundaries.

(vii) Continuous Improvement: The model incorporates a feedback loop to continuously improve the accuracy and effectiveness of the AI algorithms. This helps in adapting to new and emerging threats.

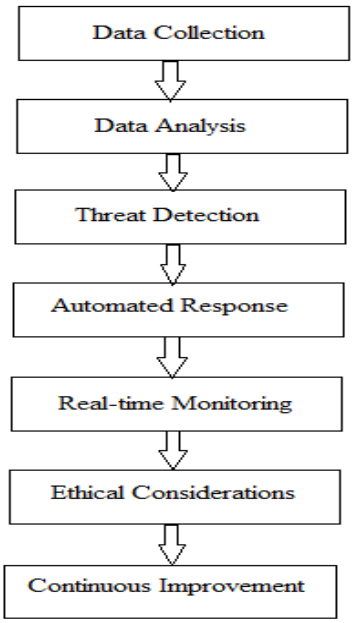

Figure 3. Cyber Crime Prevention model using AI

Here is an example formula for calculating the expected reward in a reinforcement learning algorithm:

Expected Reward = Σ[γ^(t-1) * r_t]

Where γ is the discount factor, t is the time step, and r_t is the reward at time step t.

Journal of Chemical Health Risks

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JCHR (2023) 13(4s), 814-822 | ISSN:2251-6727

These are just hypothetical formulas, and the specific formulas used in a real-world system would depend on the specific requirements and constraints of the system.
Overall, the Cyber Crime Prevention Model using AI provides organizations with a proactive and effective approach to cyber security. The model enables organizations to detect, prevent, and respond to cyber threats quickly and effectively.

5. Analysis and verification of the Proposed Model

An example of the proposed Cyber Crime Prevention Model using Artificial Intelligence (AI) is a system that is used by a financial institution to detect and prevent fraudulent activities. The system collects data from various sources such as transaction logs, customer profiles, and user behavior patterns. The collected data is analyzed using AI algorithms to identify any anomalies or suspicious patterns. The system then uses machine learning algorithms to classify potential fraud activities based on their severity and impact.
Once a potential fraud is detected, the system triggers an automated response to mitigate the impact of the threat. The response may include alerting security personnel, blocking transactions, or disabling user accounts. The system continuously monitors the network and systems for any new threats or anomalies and adapts to new and emerging threats through continuous improvement.
Moreover, the system incorporates ethical considerations and human oversight to ensure that the AI-powered system operates in a responsible and transparent manner, without violating any legal or ethical boundaries.
here's an example of some mathematical data that could be used in the context of detecting and preventing fraudulent activities in a financial institution using AI:

(i) Data Collection: The system collects data from various sources, such as transaction logs and customer profiles. For example, let's say the system collects data from 100,000 customer transactions per day.

(ii) Data Analysis: AI algorithms analyze the collected data to detect patterns and anomalies. For instance, the system could use anomaly detection algorithms to identify any unusual transaction patterns. Let's assume that out of the 100,000 transactions collected, 1,000 transactions are flagged as potentially fraudulent based on the analysis.

(iii) Threat Detection: The system uses machine learning algorithms to detect and classify threats based on their severity and potential impact. For instance, let's say that out of the 1,000 flagged transactions, 100 are classified as high-severity threats.

(iv) Automated Response: Once a threat is detected, the system triggers an automated response to mitigate the impact of the threat. For example, the system could block the transaction or disable the user account. Let's say that out of the 100 high-severity threats detected, the system was able to mitigate 90 of them using automated responses.

Table 1 Data Sample

Component	Data
Data Collection	100,000 customer transactions per day
Data Analysis	1,000 transactions flagged as potentially fraudulent
Threat Detection	100 high-severity threats detected
Automated Response	90 high-severity threats mitigated using automated responses
Real-time Monitoring	50 potential threats detected the next day
Continuous Improvement	Reinforcement learning algorithms used to improve the system's responses to threats

(v) Real-time Monitoring: The system continuously monitors the network and systems for any new threats or anomalies. Let's say that the system detects an additional 50 potential threats the next day.

(vi) Continuous Improvement: The system incorporates a feedback loop to continuously improve the accuracy and effectiveness of the AI algorithms. For example, the system could use reinforcement learning algorithms to learn from its past actions and improve its future responses to threats.

These are just hypothetical numbers, and the actual data and algorithms used in a real-world system would depend on the specific requirements and constraints of the financial institution.

6. Conclusion

In conclusion, the Cyber Crime Prevention Model using Artificial Intelligence provides a comprehensive and proactive approach to cyber security. By integrating AI technology into cyber security measures and processes, organizations can detect, prevent, and respond to potential cyber threats more efficiently and effectively. The use of AI algorithms allows for the

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JCHR (2023) 13(4s), 814-822 | ISSN:2251-6727

rapid analysis of large amounts of data, helping to identify patterns and anomalies that may indicate security breaches. Automated threat response and real-time monitoring improve incident response times, reducing the impact of cyber-attacks. Moreover, the model incorporates ethical considerations and human oversight, ensuring that the AI-powered system operates in a responsible and transparent manner. By adopting this framework, organizations can mitigate the risks of cybercrime and safeguard their data and digital assets.

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