AWARENESS AND PERCEPTION OF ARTIFICIAL INTELLIGENCE SYSTEMS IN SECURITY MANAGEMENT AMONG UNN UNDERGRADUATES

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Abstract

The level of awareness and perception of the artificial intelligence system in university security management among University of Nigeria Nsukka undergraduates is the main topic of this study. The Diffusion of Innovation idea served as the foundation for this investigation. A survey research method was employed in this study (interviews were done). According to academic planning unit, 2023. The undergraduates are 35,127 students. 100 students were interviewed. Here, the study makes use of the purposive sampling technique. A questionnaire (focused group discussion) was utilised in the study to gather secondary data. The secondary data were documented and made available. Presenting the data, analyzing it, and talking about the results as was mentioned previously in this study, the respondents were questioned. The study's conclusions and results demonstrated that the respondents felt that UNN undergraduates had a high degree of understanding and perception of the AI systems used in the institution's security management. School administrators should always look into pupils' uneasiness and take precautions to keep them safe. The findings will be used in creating plans to raise students' understanding of artificial intelligence (AI) and its potential applications in security management. This will contribute to demonstrating that AI can be applied sensibly and safely. In recommendations the management should, Increase Awareness: AI Literacy Workshops: Organize workshops introducing AI concepts, their applications in security, and their benefits for campus safety. Guest Lectures: Invite security professionals and AI experts to deliver guest lectures on AI security systems at UNN. Information Campaigns: Develop targeted information campaigns utilizing posters, social media, and university publications to explain AI security and address potential concerns.

KEYWORDS: awareness, perception, artificial intelligence, security management

Introduction

The importance of artificial intelligence (AI) as a security management tool has increased. The integration of artificial intelligence (AI) into security solutions has become imperative due to the rise of complex cyber threats and the need for faster and more effective response times. One of the main advantages of artificial intelligence (AI) in security management is its capacity to promptly detect and handle any threats. Artificial intelligence (AI)-powered security systems can evaluate massive amounts of data from many sources, such as sensors, security cameras, and access control systems, to discover any unusual activity or behaviour that would indicate a security breach. This makes it possible for security personnel to respond quickly and efficiently, reducing the likelihood of loss or injury.

The early detection and defence against insider threats can potentially be aided by AI. Artificial intelligence (AI) has the potential to analyse employee behaviour patterns and detect any abnormalities that could indicate employee malice. This can help prevent theft, data breaches, and any insider threats. AI can also boost the effectiveness of security administration by automating routine tasks like managing access control systems, keeping an eye on security cameras, and analyzing security data. This frees up security personnel to focus on more challenging tasks that call for direct communication with people, such as handling alerts or investigating potential threats.

Another advantage of AI for security management is its ability to adapt to and learn from new fears. Machine learning algorithms can identify patterns and trends in historical

data, which helps security systems anticipate and manage new threats more effectively. However, integrating AI into security management could come with some drawbacks. For example, AI systems may fail to detect certain risks or issue erroneous alerts, deceiving consumers into believing they are safe. AI systems' ability to collect and analyze private data raises further concerns about data security and privacy.

Generally speaking, the field of computer science that examines and grows computational techniques and strategies that allow robots to perform tasks that typically require a certain level of social cleverness is known as artificial intelligence (AI). Stated differently, imbuing machines with intelligence. The problems encountered are:

In Nigeria, secondary schooling is the prerequisite for admission to a university. It is highly valued because it serves as a breeding ground for future labourers and leaders who will propel the economic growth and advancement of Nigerian society. A university education gives students the services and acquaintance necessary to prosper in the corporate world, government service, private enterprises, and solo endeavours through instruction and learning. Unfortunately, Nigerian university education has always been a priceless, rich, and varied treasure. More than in the past, the problem of insecurity is obstructing colleges' ability to function as trustworthy tools for development and advancement. Problem of Awareness and Perception of Artificial Intelligence Systems in University's Security Management Among UNN Undergraduates

This is a well-defined research topic that explores a critical gap in understanding student perspectives on AI security systems at the University of Nigeria, Nsukka (UNN). Here's a breakdown of the key elements: **Problem:** The lack of awareness and understanding of Artificial Intelligence (AI) systems used in university security management among undergraduate students at UNN. Impact**:** This lack of awareness can lead to:

Misconceptions and fear about AI security systems, Reduced trust and cooperation with security personnel, Ineffective utilization of the benefits AI systems offer for campus safety, **Context:** The research focuses specifically on UNN undergraduates, highlighting the need for targeted studies within a particular university environment.

Persistent security breaches have ruined facilities for entrepreneurial training and academic research, dashing the hopes and dreams of successful commercial ventures. In certain regions of the country, it also prohibits people from opening enterprises, leaving many graduates jobless and driving them to turn to crime as subsistence. This deters employers from creating new jobs. Given this, the study's goal was to determine the best approaches for dealing with security-related problems in Nigerian universities.

The primary goal of the research is to determine UNN undergraduates' level of awareness and perception of artificial intelligence systems in campus security. Nevertheless, there are additional goals as well.

I. Examine how UNN undergraduates' awareness and perception of artificial intelligence systems play in campus security.
II. Determine the degree to which UNN undergraduate environmental management has benefited from artificial intelligence systems in university security.
III. Assess how UNN undergraduates view artificial intelligence (AI) technologies in terms of administration and security on campus.

The importance of this study is both university administration and undergraduate students stand to gain from the research initiative.

Artificial intelligence (AI) is rapidly transforming various sectors, and university security is no exception. AI-powered systems hold immense potential to enhance campus safety through facial recognition, access control, and automated threat detection. However, the integration of AI in university security management raises questions about student awareness and perception of these technologies. This review explores the existing literature on this topic.

Conceptual Framework

Understanding awareness and perception of AI in university security necessitates considering several key concepts:

Artificial Intelligence (AI): This refers to the ability of machines to mimic human cognitive functions like learning and problem-solving.

University Security Management: This encompasses the strategies and practices employed by universities to ensure the safety and well-being of students, staff, and property.

Awareness: This refers to the knowledge and understanding that UNN undergraduates possess regarding AI and its potential applications in university security.

Perception: This encompasses how UNN undergraduates view AI in university security, including its benefits, drawbacks, and potential impact.

Theoretical Perspectives

Several theoretical perspectives can inform the understanding of student awareness and perception of AI in university security.

Diffusion of Innovation Theory: This theory by Everett Rogers explores how innovations are communicated and adopted by individuals. It can be applied to understand how information about AI security systems spreads among students and how they form their perceptions.

Technology Acceptance Model (TAM): Developed by Fred Davis, TAM suggests that perceived usefulness and ease of use influence technology adoption. This model can be adapted to understand student acceptance of AI security systems based on their perceived effectiveness and user-friendliness.

Empirical Literature Review

Limited empirical research specifically investigates student awareness and perception of AI in university security management at UNN. However, relevant studies from other contexts and focusing on different populations can provide insights.

- Studies on librarian perceptions of AI in university libraries in UNN reveal a general awareness of AI technologies but also highlight concerns about job displacement. This suggests that students might share similar anxieties about AI replacing security personnel.
- Research on student perceptions of AI in general demonstrates a positive overall outlook, with students acknowledging AI's potential benefits. This indicates that students might be receptive to AI security systems if they perceive them as enhancing safety.

Gaps in Knowledge

While existing research offers some insights, there is a significant gap in our understanding of UNN undergraduates' specific awareness and perception of AI in university security management.

Future research should explore the following questions:

- To what extent are UNN undergraduates aware of AI and its potential applications in university security?
- How do UNN undergraduates perceive the benefits and drawbacks of AI security systems on campus?
- What factors influence student acceptance of AI security systems?
- Are there any ethical concerns regarding privacy or bias associated with AI security systems that students have?

By addressing these questions, researchers can contribute to a better understanding of student perspectives and inform the development and implementation of AI security systems that are both effective and acceptable to the university community.

AI has the potential to revolutionize university security management. However, student awareness and perception are crucial factors for successful implementation. Further research is needed to explore how Nigerian undergraduates view AI security systems and address any concerns they might have. This will ensure that AI is used responsibly and ethically to create a safer and more secure learning environment for all.

According to Stephen Hawking, the development of fake intellect will be the biggest development in the social past. Sadly, if we don't figure out how to reduce the risks, it might also be the last. One of the main issues with AI and learning is security (Köbis and Mehner, 2021). Reputable AI in education: Opportunities and difficulties (Petousi and Sifaki, 2020; Owoc et al., 2021). These days, the majority of enlightening institutes include AI technology in their curriculum, and this has drawn interest from researchers.

Numerous academics agree that artificial intelligence (AI) has a major influence on e-learning and teaching (Nawaz et al. 2020; Ahmed and Nashat, 2020). The current COVID-19 pandemic provides concrete evidence for this claim (Torda, 2020; Cavus et al., 2021). Though, security and confidentiality are the main doubts and problems that artificial intelligence (AI) and mechanism learning have brought to the education sector.

There is no denying that AI applications and systems are, in one way or another, discovering their way into classrooms and education (Sayantani, 2021). Every tool has a certain function, and both teachers and students use it in that manner. Using voices to access information, creates an immersive learning environment and raises security and privacy concerns (Gocen and Aydemir, 2020). In response to a query about privacy issues, the core attention is on undergraduate safety when it comes to AI gadgets and their use. This might also apply to the teacher's situation. Instructors also lack knowledge regarding privacy and security rights, laws, and acts, as well as the implications and costs of any infractions for the nation, instructors, and children (Vadapalli, 2021). AI and mechanism knowledge schemes rely solely on the obtainability of data. Deprived of data, it is nothing, and there is always a chance that it will be misused or leaked for nefarious reasons (Hübner, 2021).

Massive quantities of information are collected and used by AI systems to make designs and forecasts, yet there is a potential for prejudice and insight (Weyerer and Langer, 2019). These days, a lot of individuals are worried about the ethical aspects of AI systems and think that security concerns should be taken into account while developing and implementing AI systems (Samtani et al., 2021). The Facebook-Cambridge Analytica controversy is among the most notable instances of how technologically obtained data can raise privacy issues. The National Science Foundation acknowledges that a great deal of work has been done, but much more effort is still required (Calif, 2021). Kurt Markley claims that schools, colleges, and universities are vulnerable because they have large databases of student records that include information about their social security numbers, health, and payment details, among other things. To make information safe and break down data breaches, educational institutions must constantly review and redesign their security procedures. When information technology is used effectively or in distant learning situations, the problem is considerably more severe (Chan and Morgan, 2019).

The fact that AI systems are becoming increasingly linked to cybersecurity in the current era of advanced technology is particularly concerning and important because it is a result of the development of both hardware and software (Mengidis et al., 2019). This highlights the steps that policymakers need to take to mitigate or lessen the threat and has caused serious concerns about the security of different stakeholders (ELever and Kifayat, 2020). It's also critical to remember that with remote learning, security issues grow with networks and endpoints.

One issue is that mainly in the teaching area where funds for academic activities are scarce, safeguarding e-learning systems from cyberattacks is neither simple nor inexpensive (Huls, 2021). The fact that educational institutions employ relatively few technical staff members—hiring them is another financial concern—is another factor contributing to this serious threat. The problem is that not all teachers are professionals who are qualified to utilize technology or who can handle common hazards, even if adopting intelligent technologies like AI and machine learning can reduce security threats to some extent. Furthermore, there is a greater risk of security issues as artificial intelligence (AI) is used in education more often (Taddeo et al., 2019). AI is a challenge to cybersecurity that no one can ignore since it has two sharp edges (Siau and Wang, 2020).

The biggest risk and moral dilemma associated with implementing AI in educational settings is digital security, as hackers can compromise networks and resell data for illicit gains (Venema, 2021). We change how secure and private we are (Sutton et al., 2018). The unanswered question is still whether our privacy is protected and when artificial intelligence (AI) technologies will be able to maintain our anonymity. Human knowledge cannot comprehend the answer (Kirn, 2007). AI and humans are interacting more and more every day. For instance, e-learning and education use a variety of AI applications, such as chatbots and robots. Someday many will pick up human-like habits, but other human characteristics, such as consciousness and self-awareness, will remain a fantasy. Confidentiality will always be a concern because AI still requires data to learn patterns and make choices (Mhlanga, 2021). It is true, on the one hand, that AI systems raise several human rights concerns, which are assessable on an individual basis. Artificial Intelligence has numerous intricate pre-existing effects on human rights because it is neither deployed nor used in isolation but rather against the backdrop of societal conditions. Privacy is one of the numerous human rights protected by worldwide law (Levin, 2018).

In summary, there is a lot of potential for enhancing security management with artificial intelligence. Artificial intelligence (AI)-driven security solutions can help organizations become more adept at seeing and mitigating potential threats, automating tedious tasks, and responding to new ones. It is essential to consider the potential risks and limitations of AI in security management and to implement the required safeguards to ensure data security and privacy.

In current years, artificial intelligence has emerged as a critical instrument for improving the work of social data security teams. Since humans are no longer scalable enough to protect the dynamic corporate dose exterior, artificial intelligence (AI) provides vital analysis and threat identification that cybersecurity professionals may employ to lower breach risk and boost security posture. AI can help with incident response planning, real-time malware detection on networks, risk assessment and prioritization, and proactive intrusion detection.

With the use of AI, cybersecurity teams can forge solid human-machine alliances that enhance cybersecurity in a way that seems to be more potent than the sum of its parts while also advancing human understanding and quality of life.

Counsel The research suggests that school officials should be alert to students' unease and take appropriate action to ensure their safety. Plans to improve students' comprehension of artificial intelligence (AI) and its possible uses in security management will be developed using the results. This will help to show that artificial intelligence can be used safely and rationally.

Theoretical Framework

The diffusion of innovation theory examines how individuals within a social group assimilate novel concepts and make decisions about them. The dispersion procedure includes stations of interpersonal communication as well as mass media. A major component of the notion is human capital. The notion states that widespread adoption of innovations is necessary to achieve sustainability and progress. In practical scenarios, cultural flexibility was a significant factor in all cases where the theory was implemented. Rogers suggested four components for the spread of inventions, and these are:

Innovations are concepts, methods, or items that a person perceives as novel. It might also be an energy to try something novel or implement societal change.

Communication Channel: These channels facilitate the transmission of messages from one person to another. Innovations are shared among people through the communication channel. It can be transmitted by word of mouth, SMS, writing of any kind, etc. Time is the measure of how long it takes for people to adjust to new developments in society. It's the amount of time people need to adjust to novel concepts. For instance, when mobile phones were first brought to the market, it took some time for them to become widely used. The social system is a network of related individuals who come together to solve difficulties to achieve a common purpose. The term "social system" refers to the various elements that make up a society, such as institutions, religious practices, social groups, etc.

Who chose to embrace the innovation? According to Rogers, decisions are made in a social system in three different ways. He proposed three methods, which are as follows, taking into account people's autonomy and willingness to carry out decisions on their own.

Optional: People make independent decisions about innovations in the social system; Collective: All members of the social system make decisions; Authoritative: A small number of people make decisions that affect the entire social system. Additionally, Roger breaks down the Diffusion of Innovation Theory Mechanism into the five stages listed below.

Understanding: An individual can present the idea, but because they don't know enough about it, they don't show any interest in it.

Persuasion: A person is becoming increasingly interested in innovation and is constantly looking for additional information about it.

Decision: At this point, a person weighs the advantages and disadvantages of the innovation to determine whether to embrace it or reject it. "One of the most difficult stages to identify the evidence," according to Roger,

Implementation: A person attempts to determine the innovation's dependencies and gathers additional data regarding the innovation's utility before considering its future.

Confirmation: A person follows through on their decision and takes advantage of the innovation to the fullest extent possible.

The survey research method was employed for this assignment, keeping in mind the goals and nature of the investigation. According to Nworgu (1991:34), a survey is a study that attempts to gather information about and systematically explain the traits, features, or facts about a certain group. The awareness and perception of the artificial intelligence system in university security management among UNN undergraduates was the subject of this study.

The subject of study was Enugu State's UNN Undergraduates. 35,127 students at the University of Nigeria make up the study population (Source: Academic Planning Unit, UNN, 2023).

Here, the study makes use of the purposive sampling technique. According to Nwodu (2006: 32), this sampling technique is frequently referred to as judgmental sampling. Here, the respondents were chosen only if they satisfied specific requirements. The study's data came from secondary sources.

Interviews were employed in this study as a means of gathering secondary data. With the respondents' research assistance, questions were posed.

The secondary data were documented and made available. Presenting the data, analyzing it, and talking about the results as was mentioned previously in this study, the respondents were questioned.

Discussion of Findings

First research question: How well-informed are UNN undergraduates on artificial intelligence technologies related to security and administration at the university?

First research question: Of the undergraduates surveyed, fifteen said that UNN had very high awareness and perception of artificial intelligence systems in its security and management; thirty-seven said that UNN had high awareness and perception of these systems; and twenty-three said that UNN had very low awareness and perception of these systems.

Study question 2: How much has the artificial intelligence system in UNN security assisted the administration in preventing environmental damage to UNN undergraduates?

During the interview, 35 respondents said that the university's artificial intelligence systems had assisted management in protecting the environment from harm; 15 respondents said that these systems typically kept them safe; and 5 respondents said that these systems never provided any protection at all.

Research question 3: What is the nature of the perception of artificial intelligence systems in university's security, and management among UNN students?

15 respondents indicated that the nature of their perception of artificial intelligence systems in university's security and management among UNN Undergraduates was favourable; 35 respondents indicated that their perception of

artificial intelligence in university's security and management was unfavourable while 1o respondents were neutral.

SUMMARY OF THE RESULTS

The information that has been collected, organized, and examined thus far has led to the following conclusions.

1. It is clear from the results of study question one that 37 respondents stated that UNN undergraduates' perceptions of artificial intelligence systems in university security and administration were extremely high.

2. The results of the second research question showed that 35 respondents thought that the use of artificial intelligence in university security and administration among UNN undergraduates had aided the administration in preserving the environment.

3. According to the results of research question three, 35 respondents said they had a negative opinion of artificial intelligence's role in the administration and security of the university, while only one respondent expressed no opinion at all.

Conclusion

According to the report, undergraduates have a high percentage of artificial intelligence awareness and perception systems in university security management. Undergraduates also gave positive impressions on artificial intelligence. Furthermore, research showed that undergraduates have not yet embraced AI. Not like other occupations. This suggests that libraries might be losing out on AI's potential advantages.

To sum up, artificial intelligence holds great promise for improving security management. Organizations can enhance their capacity to identify and address possible risks, mechanize repetitive duties, and adjust to novel dangers by utilizing artificial intelligence (AI)-driven security solutions. To guarantee data security and privacy, it is imperative to take into account the possible risks and limitations of AI in security management and to put in place the necessary protections.

AI has become a necessary tool for enhancing the work of human information security teams in recent years. AI delivers critical analysis and threat identification that cybersecurity professionals can use to lower breach risk and strengthen security posture, as humans are no longer scalable enough to guard the dynamic business attack surface. AI is capable of risk assessment and prioritization, malware detection in real-time on networks, incident response guidance, and preemptive intrusion detection.

AI enables cybersecurity teams to create strong human-machine alliances that advance our understanding, improve our quality of life, and advance cybersecurity in a way that appears to be more powerful than the sum of its parts.

Recommendation

According to the report, school administrators should always look into pupils' feelings of uneasiness and take precautions to keep them safe. The findings will be put to use in the creation of plans aimed at raising students' understanding of artificial intelligence (AI) and its potential applications in security management. This will contribute to demonstrating that AI can be applied sensibly and safely.

Here are some recommendations to bridge the knowledge gap and improve undergraduate awareness and perception of AI in university security at the University of Nigeria, Nsukka (UNN):

Increase Awareness:

I. **AI Literacy Workshops:** Organize workshops introducing AI concepts, their applications in security, and their benefits for campus safety.

II. **Guest Lectures:** Invite security professionals and AI experts to deliver guest lectures on AI security systems at UNN.

III. **Information Campaigns:** Develop targeted information campaigns utilizing posters, social media, and university publications to explain AI security and address potential concerns.

Shape Perception:

I. **Transparency and Open Communication:** Communicate the functionalities and limitations of AI

security systems to foster trust and understanding among students.

II. **Focus on Benefits:** Highlight the positive impact of AI on security, such as faster response times, improved access control, and enhanced threat detection.

III. **Student Involvement:** Organize student focus groups or surveys to gather feedback on perceptions and concerns regarding AI security.

Address Concerns:

I. **Privacy Workshops:** Conduct workshops on data privacy and security measures implemented within AI security systems to alleviate student concerns.

II. **Ethical Discussions:** Facilitate discussions on the ethical implications of AI security, focusing on fairness, bias, and potential misuse.

III. **Human Oversight:** Emphasize the crucial role of human security personnel alongside AI systems, ensuring a balanced approach.

Additional Recommendations:

I. **Pilot Projects:** Consider implementing pilot projects with limited scope to demonstrate the effectiveness and user-friendliness of AI security systems.

II. **Collaboration:** Partner with technology companies to offer internship or research opportunities for students to gain practical experience with AI security.

III. **Curriculum Integration:** Explore ways to integrate basic AI concepts and their security applications into relevant courses at UNN.

By implementing these recommendations, UNN can cultivate a more informed and engaged student body regarding AI security. This will foster a positive environment for the responsible integration of AI to enhance campus safety and security for all.

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