# AI emerges as a key ally in combating rising cyber threats in India



As Indian enterprises embrace digital transformation, they find themselves increasingly vulnerable to growing cyber threats, particularly zero-day attacks. The landscape of cybersecurity in India has notably changed, with a staggering average of 761 cyberattack attempts detected per minute in 2023 alone, according to a recent study. This surge in cyber threats is affecting various sectors and poses significant risks to critical infrastructure. High-profile incidents, including a ransomware breach at India’s largest public hospital and a theft of $230 million from a leading cryptocurrency platform, highlight the escalating severity of these attacks.

Zero-day attacks are particularly concerning as they target unknown vulnerabilities that traditional security systems often fail to detect in real-time. Conventional security measures, which depend on established knowledge of threats and attack signatures, are ill-equipped to manage these new challenges. To combat this growing issue, businesses are increasingly turning to artificial intelligence (AI) as a crucial component in their cybersecurity strategies. AI technologies leverage advanced machine learning capabilities to continuously learn, adapt, and autonomously detect new threats, thereby enhancing real-time intrusion detection.

AI-driven anomaly detection has become a pivotal innovation in identifying potential zero-day threats. By establishing a baseline of normal network or system behaviour, AI systems can continuously monitor for any deviations, enabling them to pinpoint threats that traditional systems may miss. This detection process is dynamic, adjusting to new behavioural patterns, thus allowing for the identification of previously unknown exploits before they can lead to breaches.

The application of both supervised and unsupervised learning models in AI is instrumental in bolstering cybersecurity. Supervised learning focuses on historical attack data to detect known threats, while unsupervised learning models excel in identifying anomalies without predefined labels. This dual approach creates a balance between accurately recognising known attacks and adapting to emerging, stealthier threats that often evade conventional defences.

Another vital feature of AI in cybersecurity is its adaptive learning capacity, which refines threat detection capabilities as cyberattacks evolve. By continuously analysing new data, AI systems improve their ability to detect sophisticated threats, such as polymorphic malware or advanced persistent threats (APTs). This agility minimizes the need for manual updates, ensuring that these systems remain current and reducing the rate of false positives over time.

AI also empowers organisations with autonomous response capabilities, allowing for immediate action against detected threats without human intervention. Upon detection, these AI systems can isolate compromised systems, block malicious traffic, or implement access controls in real-time. Such rapid responses significantly curtail potential damage and alleviate the burden on cybersecurity teams, allowing them to concentrate on more strategic initiatives rather than routine incident management.

The capacity for scalable, real-time data processing is another hallmark of AI's role in modern cybersecurity. With the ability to analyse large volumes of data from various sources, including network traffic, endpoints, and cloud environments, AI can effortlessly manage complex, high-traffic settings. This continuous processing ensures that organisations benefit from instant threat detection and mitigation, enhancing their overall security posture.

Looking ahead, the future role of AI in cybersecurity appears to hold immense potential. With continued advancements in predictive analytics, AI technologies will be better equipped to anticipate and neutralise threats before they manifest. Machine learning models are expected to become increasingly sophisticated, constantly learning and adapting from new attacks to improve defensive measures against unknown threats.

To effectively navigate the rapidly evolving cyber threat landscape, it is essential for companies to prioritise AI-driven security strategies. Investing in AI technologies and fostering collaboration across industries will be crucial in building robust defensive frameworks capable of not only addressing current threats but also anticipating and neutralising future risks.

Source: [Noah Wire Services](https://www.noahwire.com)

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