

New Vista in Computer and Cyber Security

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Abstract

The rapid expansion of digital technologies, cloud computing, artificial intelligence, the Internet of Things (IoT), and interconnected information systems has created new opportunities as well as emerging challenges in computer and cyber security. Traditional security approaches are increasingly required to address sophisticated threats such as ransomware, phishing, identity theft, data breaches, malware, social engineering, and attacks on critical digital infrastructure. This paper explores new vistas in computer and cyber security by examining emerging technologies, innovative security frameworks, and evolving approaches to protecting digital assets and information systems. Particular attention is given to artificial intelligence and machine learning for threat detection, behavioural analysis, automated response, and anomaly identification. The study also considers the growing importance of zero-trust architectures, cloud security, blockchain-based security mechanisms, privacy-preserving technologies, and security solutions for IoT and edge-computing environments. In addition to technological measures, effective cybersecurity requires strong governance, risk management, cybersecurity awareness, ethical practices, and continuous monitoring. The increasing sophistication of cyber threats demonstrates the need for adaptive and proactive security strategies rather than relying solely on conventional perimeter-based defenses. The paper highlights the importance of integrating technological innovation with human expertise and organizational preparedness to develop resilient digital environments. By examining current developments and future possibilities, the study provides an overview of how emerging technologies can strengthen confidentiality, integrity, and availability while addressing new security risks. The discussion emphasizes that cybersecurity must continuously evolve alongside the rapidly changing digital landscape.

Keywords: Cyber Security, Computer Security, Artificial Intelligence, Machine Learning, Cloud Security, Zero Trust, IoT Security, Cyber Threats, Data Protection, Digital Privacy.