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Cyber Space and Outer Space Security

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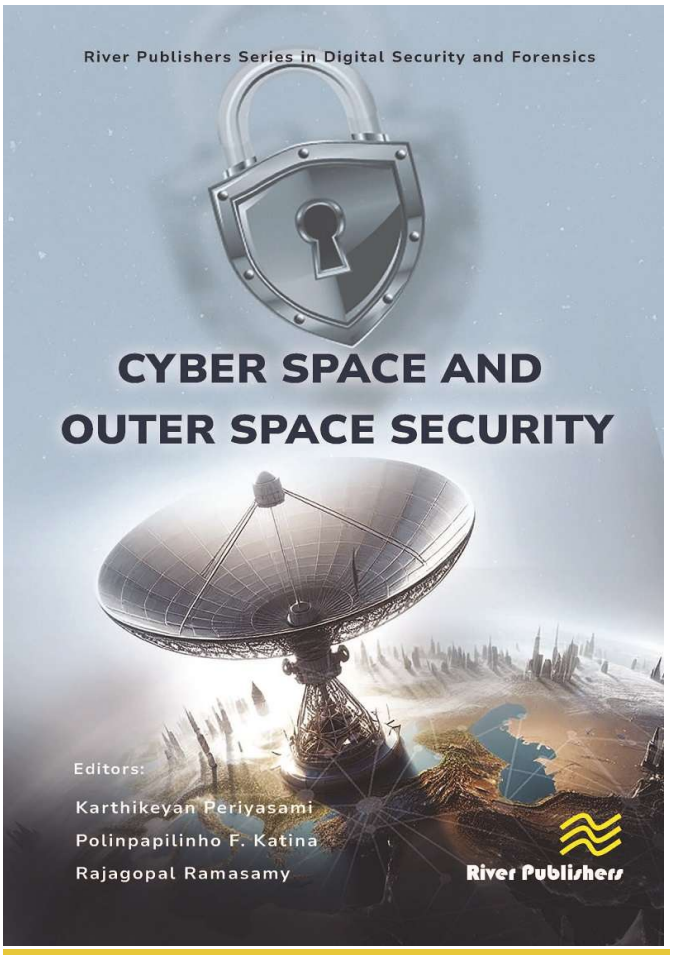
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This book delves into cutting-edge research in cyberspace and outer space security, encompassing both theoretical and experimental aspects. It provides mitigation measures and strategies to address the identified challenges within. It covers a spectrum of topics including techniques and strategies for enhancing cyberspace security, combating ransomware attacks, and securing autonomous vehicles. Additionally, it explores security and surveillance systems involving autonomous vehicles, resilience schemes against security attacks using blockchain for autonomous vehicles, security analysis of autonomous drones (UAVs), the cybersecurity kill chain, the internet of drones (IoD), and cyberspace solutions to counteract attacks. The discussion extends to mitigation strategies against weaponized AI in cyber-attacks, countermeasures for both autonomous vehicles and cyberspace attacks, as well as the limitations and future prospects of artificial intelligence (AI) and data defense in aerospace cybersecurity.

A network comprising nodes can establish both cyberspace and outer space platforms for data exchange. Cyberspace finds diverse applications, including commercial endeavors and military defense. The integration of autonomous vehicles, unmanned aircraft systems (UAS), and drones into outer space environments is facilitated through their connection to cyberspace. One illustrative example involves the utilization of blockchain-based secure drone systems for product delivery, leveraging the combined capabilities of cyberspace and outer space security technologies. This book elucidates the intricate dynamics between cyber operations and the expanding realm of autonomous outer cyberspace, presenting new security challenges arising from heightened complexity and emerging vulnerabilities.

TABLE OF CONTENTS

1. Cyber Space and Outer Space Security and Mitigation Strategies
2. Cyber Security for Space Systems
3. Cybersecurity Kill Chain in Outer Space and Cyberspace Security
4. Ransomware Attacks in Cyber Space and Mitigation Strategies
5. Cyber Attacker Profiling and Cyber Bullying Overview
6. Revolutionizing Medical Aid in Outer Space: A Blockchain-enabled Drone Delivery
System
7. A Secure Resilient Scheme for Autonomous Vehicles against External Attacks
8. Internet of Drones Security and Privacy
9. Post Quantum Cryptographic approach for Cyberspace Security
10. Navigating the Boundless: Security in Cyberspace and Outer Space



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