Special Issue Reprint

Security and Privacy in Networks and Multimedia

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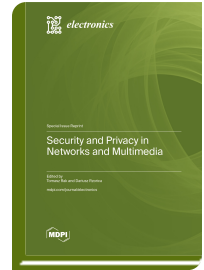
The rapid advancement of technology necessitates the development of innovative solutions that maintain robust security and privacy across data networks and multimedia systems. This collection aims to advance the state of the art in network and multimedia security, offering innovative solutions to pressing challenges and contributing significantly to the security of our increasingly digital world. Key topics include resilient forecasting networks for smart cities, integrating collective intelligence predictors that mitigate cyberattack impacts, and comprehensive security measures for supply chains utilizing machine learning and blockchain technologies. This Special Issue also explores advanced detection methods, such as jamming detection in next-generation communication systems and format-preserving encryption for network layer privacy protection. Intrusion detection and AI-enhanced security feature prominently, with the methods presented including semi-supervised alert filtering and the Improved Sine Cosine Algorithm with deep learning for anomaly detection. Generative approaches, such as the SPE-ACGAN method, address class imbalance in network intrusion detection systems, while end-verifiable key frameworks enhance IoT security. This Special Issue also covers explainable security solutions, such as the detection of evasive malicious PDFs using ensemble learning, and advanced cryptographic techniques, including radio frequency fingerprinting for smart grid security and hierarchical key management for wireless sensor networks in medical environments.

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