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Security and Privacy Challenges Associated With 6G Networks, Including the Use of AI, IoT, and Quantum Cryptography

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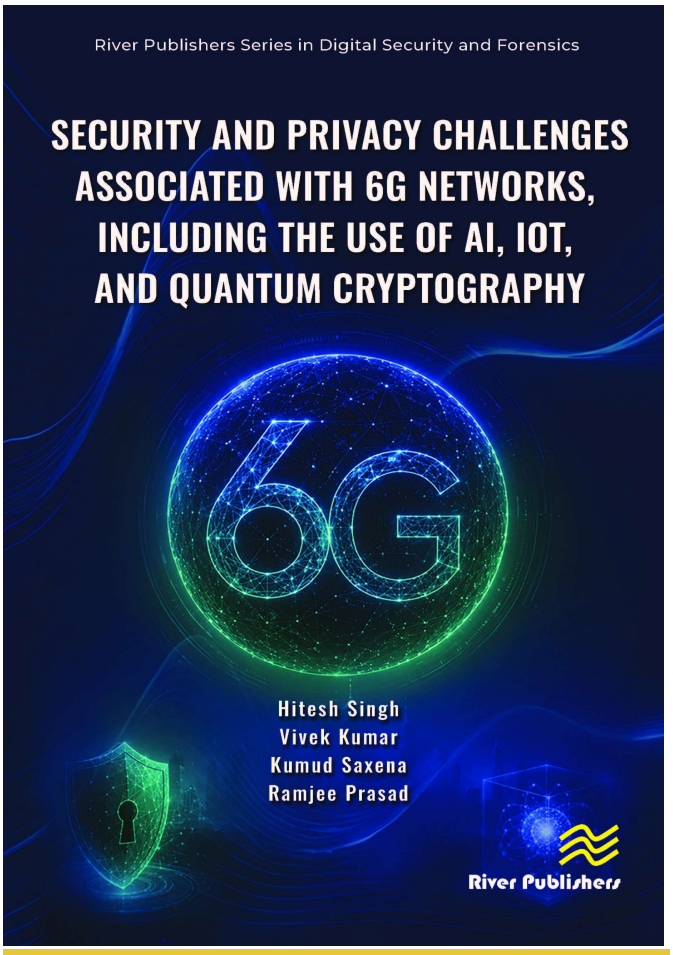
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The emergence of 6G networks introduces complex security and privacy challenges driven by technologies such as artificial intelligence (AI), the Internet of Things (IoT), and quantum cryptography. While these innovations enable transformative capabilities, they also expand the attack surface and introduce new vulnerabilities. This book examines threats such as AI-driven cyberattacks, insecure IoT ecosystems, and the practical limitations of quantum cryptographic systems. It explores emerging solutions, including advanced security architectures, AI-enabled defenses, blockchain integration, and evolving standards for secure, privacy-preserving communication. Bridging research and application, the text provides a forward-looking perspective for researchers, engineers, and policymakers working to ensure the integrity, confidentiality, and resilience of next-generation networks.

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