

Building Secure Hardware

Cryptographic Techniques for Modern Applications

Building Secure Hardware is designed to be the definitive guide to the world of hardware cryptography, blending deep theoretical insights with practical applications. This book starts by laying a strong foundation in the basics of cryptography. It demystifies complex concepts, explaining how cryptographic techniques have evolved over time and why they are essential for protecting data. We will explore the differences between hardware and software cryptography and understand why hardware-based solutions often offer superior security. The book also covers hash functions and digital signatures, critical tools for ensuring data integrity and authenticity. Security is not just about having the right tools but also about implementing them correctly. The book emphasizes the principles of secure hardware design, highlighting common vulnerabilities and providing strategies to make those design power-efficient which is suitable for promoting the ideas of Green Communication. Finally, the book looks to the future, discussing emerging technologies and trends in hardware cryptography. Building Secure Hardware is more than just a technical manual; it's a comprehensive resource that bridges the gap between theory and practice.

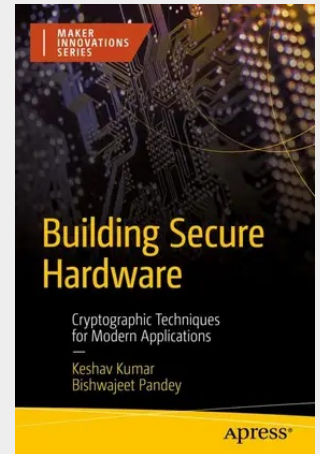
What You Will Learn:- Learn key algorithms like AES, RSA, ECC, and hash functions used in encryption and data protection- Explore practical implementations using HSMs, FPGAs, ASICs, and TPMs- Design secure and energy-efficient hardware for modern, low-power IoT systems- Discover real-world applications and future trends, including agentic AI and emerging cryptographic tools

Who This Book Is For: Whether you're a student, an entrepreneur, or a professional in cryptography, computer science, electrical engineering, or information security, this comprehensive guide is your go-to resource for mastering hardware cryptography, bridging theory with hands-on implementation to help you confidently build secure, efficient systems.

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