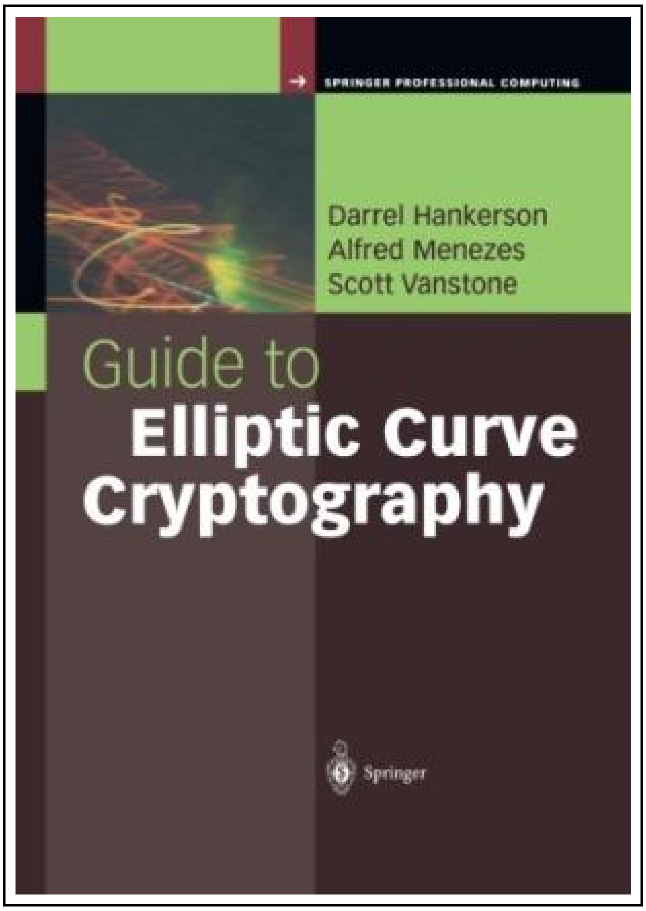
Guide to Elliptic Curve Cryptography



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Reviews

This composed book is excellent. This really is for all who statte that there had not been a worth reading through. Your life period will probably be change as soon as you total looking over this ebook.

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GUIDE TO ELLIPTIC CURVE CRYPTOGRAPHY

Book Condition: New. Publisher/Verlag: Springer, Berlin | After two decades of research and development, elliptic curve cryptography now has widespread exposure and acceptance. Industry, banking, and government standards are in place to facilitate extensive deployment of this efficient public-key mechanism. Anchored by a comprehensive treatment of the practical aspects of elliptic curve cryptography (ECC), this guide explains the basic mathematics, describes state-of-the-art implementation methods, and presents standardized protocols for public-key encryption, digital signatures, and key establishment. In addition, the book addresses some issues that arise in software and hardware implementation, as well as side-channel attacks and countermeasures. Readers receive the theoretical fundamentals as an underpinning for a wealth of practical and accessible knowledge about efficient application. Features & Benefits:Breadth of coverage and unified, integrated approach to elliptic curve cryptosystemsDescribes important industry and government protocols, such as the FIPS 186-2 standard from the U.S. National Institute for Standards and TechnologyProvides full exposition on techniques for efficiently implementing finite-field and elliptic curve arithmeticDistills complex mathematics and algorithms for easy understandingIncludes useful literature references, a list of algorithms, and appendices on sample parameters, ECC standards, and software toolsThis comprehensive, highly focused reference is a useful and indispensable resource for practitioners, professionals, or researchers in computer science, computer engineering, network design, and network data security. | ContentsList of AlgorithmsList of TablesList of FiguresAcronymsPreface 1 Introduction and Overview1.1 Cryptography basics1.2 Public-key cryptography1.2.1 RSAsystems1.2.2 Discrete logarithmsystems1.2.3 Elliptic curve systems1.3 Why elliptic curve cryptography?1.4 Roadmap1.5 Notes and further references 2 Finite Field Arithmetic2.1 Introduction to finite fields2.2 Primefieldarithmetic2.2.1 Addition and subtraction2.2.2 Integer multiplication2.2.3 Integer squaring2.2.4 Reduction2.2.5 Inversion2.2.6 NISTprimes2.3 Binary field arithmetic2.3.1 Addition2.3.2 Multiplication2.3.3 Polynomial multiplication2.3.4 Polynomial squaring2.3.5 Reduction2.3.6 Inversion and division2.4 Optimal extension field arithmetic2.4.1 Addition and subtraction2.4.2 Multiplication and reduction2.4.3 Inversion2.5 Notes andfurther references 3 Elliptic Curve Arithmetic3.1 Introduction to elliptic curves3.1.1 Simplified Weierstrass equations3.1.2 Group...

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