Advances In Cryptology Crypto 2003 23rd Annual International Cryptology Conference Santa Barbara California Usa August 17 21 2003 Proceedings Lecture Notes In Computer Scienc

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Topics in Cryptology -- CT-RSA 2005 Alfred John Menezes 2005-02-18 This book constitutes the refereed proceedings of the Cryptographers Track at the RSA Conference 2005, CT-RSA 2005, held in San Francisco, CA, USA in February 2005. The 23 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 74 submissions. The papers are organized in topical sections on cryptanalysis, public key encryption, signature schemes, design principles, password-based protocols, pairings, and efficient and secure implementations.

Power Analysis Attacks Stefan Mangard 2008-01-03 Power analysis attacks allow the extraction of secret information from smart cards. Smart cards are used in many applications including banking, mobile communications, pay TV, and electronic signatures. In all these applications, the security of the smart cards is of crucial importance. Power Analysis Attacks: Revealing the Secrets of Smart Cards is the first comprehensive treatment of power analysis attacks and countermeasures. Based on the principle that the only way to defend against power analysis attacks is to understand them, this book explains how power analysis attacks work. Using many examples, it discusses simple and differential power analysis as well as advanced techniques like template attacks. Furthermore, the authors provide an extensive discussion of countermeasures like shuffling, masking, and DPA-resistant logic styles. By analyzing the pros and cons of the different countermeasures, this volume allows practitioners to decide how to protect smart cards.

Handbook of Research on Ubiquitous Computing Technology for Real Time Enterprises M□hlh□user, Max 2008-01-31 "This book combines the fundamental methods, algorithms, and concepts of pervasive computing with current innovations and solutions to emerging challenges. It systemically covers such topics as network and application scalability, wireless network connectivity, adaptability and "context-aware" computing, information technology security and liability, and human-computer interaction"--Provided by publisher.

An Investigation into the Detection and Mitigation of Denial of Service (DoS) Attacks S.V. Raghavan 2011-09-29 Around the globe, nations face the problem of protecting their Critical Information Infrastructure, normally referred to as Cyber Space. In this monograph, we capture FIVE different aspects of the problem; High speed packet capture, Protection through authentication, Technology Transition, Test Bed Simulation, and Policy and Legal Environment. The monograph is the outcome of over three years of cooperation between India and Australia.

Introduction to Network Security Douglas Jacobson 2008-11-18 Unlike data communications of the past, today's networks consist of numerous devices that handle the data as it passes from the sender to the receiver. However, security concerns are frequently raised in circumstances where interconnected computers use a network not controlled by any one entity or organization. Introduction to Network Security exam

Security and Privacy in the Age of Ubiquitous Computing Ryoichi Sasaki 2010-06-03 Even in the age of ubiquitous computing, the importance of the Internet will not change and we still need to solve conventional security issues. In addition, we need to deal with new issues such as security in the P2P environment, privacy issues in the use of smart cards, and RFID systems. Security and Privacy in the Age of Ubiquitous Computing addresses these issues and more by exploring a wide scope of topics. The volume presents a selection of papers from the proceedings of the 20th IFIP International Information Security Conference held from May 30 to June 1, 2005 in Chiba, Japan. Topics covered include cryptography applications, authentication, privacy and anonymity, DRM and content security, computer forensics, Internet and web security, security in sensor networks, intrusion detection, commercial and industrial security, authorization and access control, information warfare and critical protection infrastructure. These papers represent the most current research in information security, including research funded in part by DARPA and the National Science Foundation.

Information Security Applications Chae Hoon Lim 2005-02-10 The 5th International Workshop on Information Security Applications (WISA 2004) was held in Jeju Island, Korea during August 23-25, 2004. The workshop was sponsored by the Korea Institute of Information Security and Cryptology (KIISC), the Electronics and Telecommunications Research Institute (ETRI) and the Ministry of Information and Communication (MIC). The aim of the workshop is to serve as a forum for new conceptual and - perimental research results in the area of information security applications from the academic community as well as from the industry. The workshop program covers a wide range of security aspects including cryptography, cryptanalysis, network/system security and implementation aspects. The programcommittee received169 papersfrom 22 countries,andaccepted 37 papers for a full presentation track and 30 papers for a short presentation track. Each paper

was carefully evaluated through peer-review by at least three members of the programcommittee. This volume contains revised versions of 36 papers accepted and presented in the full presentation track. Short papers were only published in the WISA 2004 pre-proceedings as preliminary versions and are allowed to be published elsewhere as extended versions. In addition to the contributed papers, Professors Gene Tsudik and Ross Andersongaveinvitedtalks,entitledSecurityinOutsourcedDatabasesandWhat does 'Security' mean for Ubiquitous Applications?, respectively.

Proceedings of the IFIP TC 11 23rd International Information Security Conference Sushil Jajodia 2008-07-30 These proceedings contain the papers selected for presentation at the 23rd Inter- tional Information Security Conference (SEC 2008), co-located with IFIP World Computer Congress (WCC 2008), September 8–10, 2008 in Milan, Italy. In - sponse to the call for papers, 143 papers were submitted to the conference. All - pers were evaluated on the basis of their signi?cance, novelty,and technical quality, and reviewed by at least three members of the program committee. Reviewing was blind meaning that the authors were not told which committee members reviewed which papers. The program committee meeting was held electronically, holding - tensive discussion over a period of three weeks. Of the papers submitted, 42 full papers and 11 short papers were selected for presentation at the conference. A conference like this just does not happen; it depends on the volunteer efforts of a host of individuals. There is a long list of people who volunteered their time and energy to put together the conference and who deserve acknowledgment. We thank all members of the program committee and the external reviewers for their hard work in the paper evaluation. Due to the large number of submissions, p- gram committee members were required to complete their reviews in a short time frame. We are especially thankful to them for the commitment they showed with their active participation in the electronic discussion.

Advances in Cryptology – CRYPTO 2020 Daniele Micciancio 2020-08-11 Conference on Cryptologic Research, CRYPTO 2020, which was held during August 17–21, 2020. Crypto has traditionally been held at UCSB every year, but due to the COVID-19 pandemic it will be an online event in 2020. The 85 papers presented in the proceedings were carefully reviewed and selected from a total of 371 submissions. They were organized in topical sections as follows: Part I: Security Models; Symmetric and Real World Cryptography; Hardware Security and Leakage Resilience; Outsourced encryption; Constructions. Part II: Public Key Cryptanalysis; Lattice Algorithms and Cryptanalysis; Lattice-based and Post Quantum Cryptography; Multi-Party Computation. Part III: Multi-Party Computation; Secret Sharing; Cryptanalysis; Delay functions; Zero Knowledge.

Public Key Cryptography - PKC 2003 Fla.) International Workshop on Practice and Theory in Public Key Cryptography (6th : 2003 : Miami 2002-12-13 PKC 2003 was the Sixth International Workshop on Practice and Theory in Public Key Cryptography and was sponsored by IACR, the International As- ciation for Cryptologic Research (www.iacr.org). This year the workshop was organized in cooperation with the Department of Computer Science, Florida State University. The General Chair, Mike Burmester was responsible for local organization, registration, etc. There were 105 submitted papers which were considered by the Program Committee. This is an increase of 52% compared to PKC 2002, which took place in Paris, France, February 2002, and which was incorrectly identi?ed on the cover of the proceedings as being the fourth workshop. Due to the large number of submissions, some papers that contained new ideas had to be rejected. Priority was given to novel papers. Of the 105 submissions, 26 were selected for the proceedings. These contain the revised versions of the accepted papers. Each paper was sent to at least 3 members of the program committee for comments. Revisions were not checked for correctness of their scienti?c aspects and the authors bear full responsibility for the contents of their papers. Some authors will write ?nal versions of their papers for publication in refereed journals. I am very grateful to the members of the Program Committee for their hard work in the di?cult task of selecting roughly 1 out of 4 of the submitted papers.

Advanced Boolean Techniques Rolf Drechsler 2019-07-08 This book describes recent findings in the domain of Boolean logic and Boolean algebra, covering application domains in circuit and system design, but also basic research in mathematics and theoretical computer science. Content includes invited chapters and a selection of the best papers presented at the 13th annual International Workshop on Boolean Problems. Provides a single-source reference to the state-of-the-art research in the field of logic synthesis and Boolean techniques; Includes a selection of the best papers presented at the 13th annual International Workshop on Boolean Problems; Covers Boolean algebras, Boolean logic, Boolean modeling, Combinatorial Search, Boolean and bitwise arithmetic, Software and tools for the solution of Boolean problems, Applications of Boolean logic and algebras, Applications to real-world problems, Boolean constraint solving, and Extensions of Boolean logic.

Advances in Cryptology -- CRYPTO 2015 Rosario Gennaro 2015-07-31 The two volume-set, LNCS 9215 and LNCS 9216, constitutes the refereed proceedings of the 35th Annual International Cryptology Conference, CRYPTO 2015, held in Santa Barbara, CA, USA, in August 2015. The 74 revised full papers presented were carefully reviewed and selected from 266 submissions. The papers are organized in the following topical sections: lattice-based cryptography; cryptanalytic insights; modes and constructions; multilinear maps and IO; pseudorandomness; block cipher cryptanalysis; integrity; assumptions; hash functions and stream cipher cryptanalysis; implementations; multiparty computation; zero-knowledge; theory; signatures; non-signaling and information-theoretic crypto; attribute-based encryption; new primitives; and fully homomorphic/functional encryption.

Advances in Cryptology – EUROCRYPT 2016 Marc Fischlin 2016-04-27 The two-volume proceedings LNCS 9665 + 9666 constitutes the thoroughly refereed proceedings of the 35th Annual International Conference on the Theory and Applications of Cryptographic Techniques, EUROCRYPT 2016, held in Vienna, Austria, in May 2016. The 62 full papers included in these volumes were carefully reviewed and selected from 274 submissions. The papers are organized in topical sections named: (pseudo)randomness; LPN/LWE; cryptanalysis; masking; fully homomorphic encryption; number theory; hash functions; multilinear maps; message authentification codes; attacks on SSL/TLS; real-world protocols; robust designs; lattice reduction; latticed-based schemes; zero-knowledge; pseudorandom functions; multi-party computation; separations; protocols; round complexity; commitments; lattices; leakage; in differentiability; obfuscation; and automated analysis, functional encryption, and non-malleable codes.

Theory of Cryptography Joe Kilian 2005-01-27 TCC 2005, the 2nd Annual Theory of Cryptography Conference, was held in Cambridge,Massachusetts,onFebruary10–12,2005.Theconferencereceived84 submissions,ofwhichtheprogramcommitteeselected32forpresentation.These proceedings contain the revised versions of the submissions that were presented at the conference. These revisions have not been checked for correctness, and the authors bear full responsibility for the contents of their papers. The conference program

also included a panel discussion on the future of theoretical cryptography and its relationship to the real world (whatever that is). It also included the traditional “rump session,” featuring short, informal talks on late-breaking research news. Much as hatters of old faced mercury-induced neurological damage as an occupational hazard, computer scientists will on rare occasion be a?icted with egocentrism, probably due to prolonged CRT exposure. Thus, you must view withpityandnotcontemptmyunalloyedelationathavingmynameonthefront cover of this LNCS volume, and my deep-seated conviction that I fully deserve the fame and riches that will surely come of it. However, having in recent years switched over to an LCD monitor, I would like to acknowledge some of the many who contributed to this conference. First thanks are due to the many researchers from all over the world who submitted their work to this conference. Lacking shrimp and chocolate-covered strawberries, TCC has to work hard to be a good conference. As a community, I think we have.

Advances in Computers Marvin Zelkowitz 2011-08-09 This is volume 74 of Advances in Computers, subtitled “Recent advances in software development. This series, which began in 1960, is the oldest continuously published series of books that has chronicled the ever- changing landscape of information technology. Each year three volumes are published, each presenting five to seven chapters describing the latest technology in the use of computers today. In this current volume, we present six chapters that give an update on some of the major issues affecting the development of software today. The six chapters in this volume can be divided into two general categories. The first three deal with the increasing importance of security in the software we write and provide insights into how to increase that security. The three latter chapters look at software development as a whole and provide guidelines in how best to make certain decisions on a project-level basis. The book series is a valuable addition to university courses that emphasize the topics under discussion in that particular volume as well as belonging on the bookshelf of industrial practitioners who need to implement many of the technologies that are described.

Roadmap to Information Security: For IT and Infosec Managers Michael E. Whitman 2012-08-01 ROADMAP TO INFORMATION SECURITY: FOR IT AND INFOSEC MANAGERS provides a solid overview of information security and its relationship to the information needs of an organization. Content is tailored to the unique needs of information systems professionals who find themselves brought in to the intricacies of information security responsibilities. The book is written for a wide variety of audiences looking to step up to emerging security challenges, ranging from students to experienced professionals. This book is designed to guide the information technology manager in dealing with the challenges associated with the security aspects of their role, providing concise guidance on assessing and improving an organization's security. The content helps IT managers to handle an assignment to an information security role in ways that conform to expectations and requirements, while supporting the goals of the manager in building and maintaining a solid information security program. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Advances in Cryptology -- Crypto 2003 Dan Boneh 2014-01-15

Encyclopedia of Cryptography and Security Henk C.A. van Tilborg 2014-07-08 Expanded into two volumes, the Second Edition of Springer’s Encyclopedia of Cryptography and Security brings the latest and most comprehensive coverage of the topic: Definitive information on cryptography and information security from highly regarded researchers Effective tool for professionals in many fields and researchers of all levels Extensive resource with more than 700 contributions in Second Edition 5643 references, more than twice the number of references that appear in the First Edition With over 300 new entries, appearing in an A-Z format, the Encyclopedia of Cryptography and Security provides easy, intuitive access to information on all aspects of cryptography and security. As a critical enhancement to the First Edition’s base of 464 entries, the information in the Encyclopedia is relevant for researchers and professionals alike. Topics for this comprehensive reference were elected, written, and peer-reviewed by a pool of distinguished researchers in the field. The Second Edition’s editorial board now includes 34 scholars, which was expanded from 18 members in the First Edition. Representing the work of researchers from over 30 countries, the Encyclopedia is broad in scope, covering everything from authentication and identification to quantum cryptography and web security. The text’s practical style is instructional, yet fosters investigation. Each area presents concepts, designs, and specific implementations. The highly-structured essays in this work include synonyms, a definition and discussion of the topic, bibliographies, and links to related literature. Extensive cross-references to other entries within the Encyclopedia support efficient, user-friendly searches for immediate access to relevant information. Key concepts presented in the Encyclopedia of Cryptography and Security include: Authentication and identification; Block ciphers and stream ciphers; Computational issues; Copy protection; Cryptanalysis and security; Cryptographic protocols; Electronic payment and digital certificates; Elliptic curve cryptography; Factorization algorithms and primality tests; Hash functions and MACs; Historical systems; Identity-based cryptography; Implementation aspects for smart cards and standards; Key management; Multiparty computations like voting schemes; Public key cryptography; Quantum cryptography; Secret sharing schemes; Sequences; Web Security. Topics covered: Data Structures, Cryptography and Information Theory; Data Encryption; Coding and Information Theory; Appl.Mathematics/Computational Methods of Engineering; Applications of Mathematics; Complexity. This authoritative reference will be published in two formats: print and online. The online edition features hyperlinks to cross-references, in addition to significant research.

Analysis of Real-World Security Protocols in a Universal Composability Framework Max Tuengerthal 2013-08-05 Security protocols employed in practice are used in our everyday life and we heavily depend on their security. The complexity of these protocols still poses a big challenge on their comprehensive analysis. To cope with this complexity, a promising approach is modular security analysis based on universal composability frameworks, such as Canetti's UC model. This appealing approach has, however, only very rarely been applied to the analysis of (existing) real-world protocols. Either the analysis was not fully modular or it could only be applied to idealized variants of the protocols. The main goal of this thesis therefore is to push modular protocol analysis as far as possible, but without giving up on accurate modeling. Our main contributions in a nutshell: An ideal functionality for symmetric key cryptography that provides a solid foundation for faithful, composable cryptographic analysis of real-world security protocols. A computational soundness result of formal analysis for key exchange protocols that use symmetric encryption. Novel universal and joint state composition theorems that are applicable to the analysis of real-world security protocols. Case studies on several security protocols: SSL/TLS, IEEE 802.11i (WPA2), SSH, IPsec, and EAP-PSK. We showed that our new composition theorems can be used for a faithful,

modular analysis of these protocols. In addition, we proved composable security properties for two central protocols of the IEEE standard 802.11i, namely the 4-Way Handshake Protocol and the CCM Protocol. This constitutes the first rigorous cryptographic analysis of these protocols. While our applications focus on real-world security protocols, our theorems, models, and techniques should be useful beyond this domain.

Transparent User Authentication Nathan Clarke 2011-08-17 This groundbreaking text examines the problem of user authentication from a completely new viewpoint. Rather than describing the requirements, technologies and implementation issues of designing point-of-entry authentication, the book introduces and investigates the technological requirements of implementing transparent user authentication – where authentication credentials are captured during a user's normal interaction with a system. This approach would transform user authentication from a binary point-of-entry decision to a continuous identity confidence measure. Topics and features: discusses the need for user authentication; reviews existing authentication approaches; introduces novel behavioural biometrics techniques; examines the wider system-specific issues with designing large-scale multimodal authentication systems; concludes with a look to the future of user authentication.

Wireless Security and Cryptography Nicolas Sklavos 2017-12-19 As the use of wireless devices becomes widespread, so does the need for strong and secure transport protocols. Even with this intensified need for securing systems, using cryptography does not seem to be a viable solution due to difficulties in implementation. The security layers of many wireless protocols use outdated encryption algorithms, which have proven unsuitable for hardware usage, particularly with handheld devices. Summarizing key issues involved in achieving desirable performance in security implementations, Wireless Security and Cryptography: Specifications and Implementations focuses on alternative integration approaches for wireless communication security. It gives an overview of the current security layer of wireless protocols and presents the performance characteristics of implementations in both software and hardware. This resource also presents efficient and novel methods to execute security schemes in wireless protocols with high performance. It provides the state of the art research trends in implementations of wireless protocol security for current and future wireless communications. Unique in its coverage of specification and implementation concerns that include hardware design techniques, Wireless Security and Cryptography: Specifications and Implementations provides thorough coverage of wireless network security and recent research directions in the field.

Information Security and Cryptology - ICISC 2003 Jong In Lim 2004-05-12 This book constitutes the thoroughly refereed post-proceedings of the 6th International Conference on Information Security and Cryptology, ICISC 2003, held in Seoul, Korea, in November 2003. The 32 revised full papers presented together with an invited paper were carefully selected from 163 submissions during two rounds of reviewing and improvement. The papers are organized in topical sections on digital signatures, primitives, fast implementations, computer security and mobile security, voting and auction protocols, watermarking, authentication and threshold protocols, and block ciphers and stream ciphers.

Information Security and Privacy Colin Boyd 2005-07-11 ACISP 2005 was held at Queensland University of Technology in Brisbane, during July 4–6, 2005.

VLSI and Hardware Implementations using Modern Machine Learning Methods Sandeep Saini 2022-01-19 Machine learning is a potential solution to resolve bottleneck issues in VLSI via optimizing tasks in the design process. This book aims to provide the latest machine-learning–based methods, algorithms, architectures, and frameworks designed for VLSI design. The focus is on digital, analog, and mixed-signal design techniques, device modeling, physical design, hardware implementation, testability, reconfigurable design, synthesis and verification, and related areas. Chapters include case studies as well as novel research ideas in the given field. Overall, the book provides practical implementations of VLSI design, IC design, and hardware realization using machine learning techniques. Features: Provides the details of state-of-the-art machine learning methods used in VLSI design Discusses hardware implementation and device modeling pertaining to machine learning algorithms Explores machine learning for various VLSI architectures and reconfigurable computing Illustrates the latest techniques for device size and feature optimization Highlights the latest case studies and reviews of the methods used for hardware implementation This book is aimed at researchers, professionals, and graduate students in VLSI, machine learning, electrical and electronic engineering, computer engineering, and hardware systems.

Public Key Cryptography - PKC 2003 Yvo Desmedt 2003-07-01 This book constitutes the refereed proceedings of the 6th International Workshop on Practice and Theory in Public Key Cryptosystems, PKC 2003, held in Miami, Florida, USA in January 2003. The 26 revised full papers presented were carefully reviewed and selected from 105 submissions. The papers are organized in topical sections on Diffie-Hellman based schemes, threshold cryptography, reduction proofs, broadcast and tracing, digital signatures, specialized multiparty cryptography, cryptanalysis, elliptic curves: implementation attacks, implementation and hardware issues, new public key schemes, and elliptic curves: general issues.

Theory and Practice of Cryptography Solutions for Secure Information Systems Elçi, Atilla 2013-05-31 Information Systems (IS) are a nearly omnipresent aspect of the modern world, playing crucial roles in the fields of science and engineering, business and law, art and culture, politics and government, and many others. As such, identity theft and unauthorized access to these systems are serious concerns. Theory and Practice of Cryptography Solutions for Secure Information Systems explores current trends in IS security technologies, techniques, and concerns, primarily through the use of cryptographic tools to safeguard valuable information resources. This reference book serves the needs of professionals, academics, and students requiring dedicated information systems free from outside interference, as well as developers of secure IS applications. This book is part of the Advances in Information Security, Privacy, and Ethics series collection.

Hardware Security Swarup Bhunia 2018-10-30 Hardware Security: A Hands-On Learning Approach provides a broad, comprehensive and practical overview of hardware security that encompasses all levels of the electronic hardware infrastructure. It covers basic concepts like advanced attack techniques and countermeasures that are illustrated through theory, case studies and well-designed, hands-on laboratory exercises for each key concept. The book is ideal as a textbook for upper-level undergraduate students studying computer engineering, computer science, electrical engineering, and biomedical engineering, but is also a handy reference for graduate students, researchers and industry professionals. For academic courses, the book contains a robust suite of teaching ancillaries. Users will be able to access schematic, layout and design files for a printed circuit board for hardware hacking (i.e. the HaHa board) that can be used by instructors to fabricate boards, a suite of videos that demonstrate different hardware vulnerabilities, hardware attacks and countermeasures, and a detailed description and user manual for companion materials. Provides a thorough overview of computer hardware, including

the fundamentals of computer systems and the implications of security risks Includes discussion of the liability, safety and privacy implications of hardware and software security and interaction Gives insights on a wide range of security, trust issues and emerging attacks and protection mechanisms in the electronic hardware lifecycle, from design, fabrication, test, and distribution, straight through to supply chain and deployment in the field

The LLL Algorithm Phong Q. Nguyen 2009-12-02 The first book to offer a comprehensive view of the LLL algorithm, this text surveys computational aspects of Euclidean lattices and their main applications. It includes many detailed motivations, explanations and examples.

Cryptography Riccardo Bernardini 2021-08-18 Despite being 2000 years old, cryptography is still a very active field of research. New needs and application fields, like privacy, the Internet of Things (IoT), physically unclonable functions (PUFs), post-quantum cryptography, and quantum key distribution, will keep fueling the work in this field. This book discusses quantum cryptography, lightweight cryptography for IoT, PUFs, cryptanalysis, and more. It provides a snapshot of some recent research results in the field, providing readers with some useful tools and stimulating new ideas and applications for future investigation.

A Classical Introduction to Cryptography Exercise Book Thomas Baigneres 2007-08-06 TO CRYPTOGRAPHY EXERCISE BOOK Thomas Baignkres EPFL, Switzerland Pascal Junod EPFL, Switzerland Yi Lu EPFL, Switzerland Jean Monnerat EPFL, Switzerland Serge Vaudenay EPFL, Switzerland Springer - Thomas Baignbres Pascal Junod EPFL - I&C - LASEC Lausanne, Switzerland Lausanne, Switzerland Yi Lu Jean Monnerat EPFL - I&C - LASEC EPFL-I&C-LASEC Lausanne, Switzerland Lausanne, Switzerland Serge Vaudenay Lausanne, Switzerland Library of Congress Cataloging-in-Publication Data A C.I.P. Catalogue record for this book is available from the Library of Congress. A CLASSICAL INTRODUCTION TO CRYPTOGRAPHY EXERCISE BOOK by Thomas Baignkres, Palcal Junod, Yi Lu, Jean Monnerat and Serge Vaudenay ISBN- 10: 0-387-27934-2 e-ISBN-10: 0-387-28835-X ISBN- 13: 978-0-387-27934-3 e-ISBN- 13: 978-0-387-28835-2 Printed on acid-free paper. O 2006 Springer Science+Business Media, Inc. All rights reserved. This work may not be translated or copied in whole or in part without the written permission of the publisher (Springer Science+Business Media, Inc., 233 Spring Street, New York, NY 10013, USA), except for brief excerpts in connection with reviews or scholarly analysis. Use in connection with any form of information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now know or hereafter developed is forbidden. The use in this publication of trade names, trademarks, service marks and similar terms, even if the are not identified as such, is not to be taken as an expression of opinion as to whether or not they are subject to proprietary rights. Printed in the United States of America.

Guide to Elliptic Curve Cryptography Darrel Hankerson 2006-06-01 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 cryptosystems * Describes important industry and government protocols, such as the FIPS 186-2 standard from the U.S. National Institute for Standards and Technology * Provides full exposition on techniques for efficiently implementing finite-field and elliptic curve arithmetic * Distills complex mathematics and algorithms for easy understanding * Includes useful literature references, a list of algorithms, and appendices on sample parameters, ECC standards, and software tools This 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.

Advances in Cryptology - CRYPTO 2004 Matt Franklin 2004-12-06 Crypto 2004, the 24th Annual Crypto Conference, was sponsored by the Int- national Association for Cryptologic Research (IACR) in cooperation with the IEEE Computer Society Technical Committee on Security and Privacy and the Computer Science Department of the University of California at Santa Barbara. The program committee accepted 33 papers for presentation at the conf- ence. These were selected from a total of 211 submissions. Each paper received at least three independent reviews. The selection process included a Web-based discussion phase, and a one-day program committee meeting at New York U- versity. These proceedings include updated versions of the 33 accepted papers. The authors had a few weeks to revise them, aided by comments from the reviewers. However, the revisions were not subjected to any editorial review. Theconferenceprogramincludedtwoinvitedlectures.VictorShoup’sinvited talk was a survey on chosen ciphertext security in public-key encryption. Susan Landau’s invited talk was entitled “Security, Liberty, and Electronic Commu- cations”. Her extended abstract is included in these proceedings. We continued the tradition of a Rump Session, chaired by Stuart Haber. Those presentations (always short, often serious) are not included here.

Cyber-Security Threats, Actors, and Dynamic Mitigation Nicholas Kolokotronis 2021-04-20 Cyber-Security Threats, Actors, and Dynamic Mitigation provides both a technical and state-of-the-art perspective as well as a systematic overview of the recent advances in different facets of cyber-security. It covers the methodologies for modeling attack strategies used by threat actors targeting devices, systems, and networks such as smart homes, critical infrastructures, and industrial IoT. With a comprehensive review of the threat landscape, the book explores both common and sophisticated threats to systems and networks. Tools and methodologies are presented for precise modeling of attack strategies, which can be used both proactively in risk management and reactively in intrusion prevention and response systems. Several contemporary techniques are offered ranging from reconnaissance and penetration testing to malware detection, analysis, and mitigation. Advanced machine learning-based approaches are also included in the area of anomaly-based detection, that are capable of detecting attacks relying on zero-day vulnerabilities and exploits. Academics, researchers, and professionals in cyber-security who want an in-depth look at the contemporary aspects of the field will find this book of interest. Those wanting a unique reference for various cyber-security threats and how they are detected, analyzed, and mitigated will reach for this book often.

Applications of Secure Multiparty Computation P. Laud 2015-07-30 We generate and gather a lot of data about ourselves and others, some of it highly confidential. The collection, storage and use of this data is strictly regulated by laws, but restricting the use of data often limits the benefits which could be obtained from

its analysis. Secure multi-party computation (SMC), a cryptographic technology, makes it possible to execute specific programs on confidential data while ensuring that no other sensitive information from the data is leaked. SMC has been the subject of academic study for more than 30 years, but first attempts to use it for actual computations in the early 2000s – although theoretically efficient – were initially not practicable. However, improvements in the situation have made possible the secure solving of even relatively large computational tasks. This book describes how many different computational tasks can be solved securely, yet efficiently. It describes how protocols can be combined to larger applications, and how the security-efficiency trade-offs of different components of an SMC application should be chosen. Many of the results described in this book were achieved as part of the project Usable and Efficient Secure Multi-party Computation (UaESMC), which was funded by the European Commission. The book will be of interest to all those whose work involves the secure analysis of confidential data.

Information Security 2005

Next-Generation Internet Byrav Ramamurthy 2011-02-03 With ever-increasing demands on capacity, quality of service, speed, and reliability, current Internet systems are under strain and under review. Combining contributions from experts in the field, this book captures the most recent and innovative designs, architectures, protocols, and mechanisms that will enable researchers to successfully build the next-generation Internet. A broad perspective is provided, with topics including innovations at the physical/transmission layer in wired and wireless media, as well as the support for new switching and routing paradigms at the device and sub-system layer. The proposed alternatives to TCP and UDP at the data transport layer for emerging environments are also covered, as are the novel models and theoretical foundations proposed for understanding network complexity. Finally, new approaches for pricing and network economics are discussed, making this ideal for students, researchers, and practitioners who need to know about designing, constructing, and operating the next-generation Internet.

Cryptographic Obfuscation Máté Horváth 2020-10-05 This book explains the development of cryptographic obfuscation, providing insight into the most important ideas and techniques. It will be a useful reference for researchers in cryptography and theoretical computer science.

Advances in Cryptology -- CRYPTO 2003 Dan Boneh 2003-10-24 Crypto 2003, the 23rd Annual Crypto Conference, was sponsored by the Int- national Association for Cryptologic Research (IACR) in cooperation with the IEEE Computer Society Technical Committee on Security and Privacy and the Computer Science Department of the University of California at Santa Barbara. The conference received 169 submissions, of which the program committee selected 34 for presentation. These proceedings contain the revised versions of the 34 submissions that were presented at the conference. These revisions have not been checked for correctness, and the authors bear full responsibility for the contents of their papers. Submissions to the conference represent cutti- edge research in the cryptographic community worldwide and cover all areas of cryptography. Many high-quality works could not be accepted. These works will surely be published elsewhere. The conference program included two invited lectures. Moni Naor spoke on cryptographic assumptions and challenges. Hugo Krawczyk spoke on the ‘SI- and-MAc’approachtoauthenticatedDi?e-HellmananditsuseintheIKEpro- cols. The conference program also included the traditional rump session, chaired by Stuart Haber, featuring short, informal talks on late-breaking research news. Assembling the conference program requires the help of many many people. To all those who pitched in, I am forever in your debt. I would like to ?rst thank the many researchers from all over the world who submitted their work to this conference. Without them, Crypto could not exist. I thank Greg Rose, the general chair, for shielding me from innumerable logistical headaches, and showing great generosity in supporting my e?orts.

Information and Communications Security Javier López 2004-12-10 This book constitutes the refereed proceedings of the 6th International Conference on Information and Communications Security, ICICS 2004, held in Malaga, Spain in October 2004. The 42 revised full papers presented were carefully reviewed and selected from 245 submissions. The papers address a broad range of topics in information and communication security including digital signatures, group signature schemes, e-commerce, digital payment systems, cryptographic attacks, mobile networking, authentication, channel analysis, power-analysis attacks, mobile agent security, broadcast encryption, AES, security analysis, XTR, access control, and intrusion detection.

Bee-Inspired Protocol Engineering Muddassar Farooq 2008-11-30 Honey bee colonies demonstrate robust adaptive efficient agent-based communications and task allocations without centralized controls – desirable features in network design. This book introduces a multipath routing algorithm for packet-switched telecommunication networks based on techniques observed in bee colonies. The algorithm, BeeHive, is dynamic, simple, efficient, robust and flexible, and it represents an important step towards intelligent networks that optimally manage resources. The author guides the reader in a survey of nature-inspired routing protocols and communication techniques observed in insect colonies. He then offers the design of a scalable framework for nature-inspired routing algorithms, and he examines a practical application using real networks of Linux routers. He also utilizes formal techniques to analytically model the performance of nature-inspired routing algorithms. In the last chapters of the book, he introduces an immune-inspired security framework for nature-inspired algorithms, and uses the wisdom of the hive for routing in ad hoc and sensor networks. Finally, the author provides a comprehensive bibliography to serve as a reference for nature-inspired solutions to networking problems. This book bridges the gap between natural computing and computer networking. What sets this book apart from other texts on this subject is its natural engineering approach in which the challenges and objectives of a real-world system are identified before its solution, nature-inspired or otherwise, is discussed. This balanced exposition of the book makes it equally suitable for telecommunication network designers and theorists, and computer science researchers engaged with artificial intelligence, agents, and nature-inspired techniques.