

| | |
|-------------------------|---|
| 1. Record Nr. | UNISA996485666803316 |
| Titolo | Information and communications security : 24th International Conference, ICICS 2022, Canterbury, UK, September 5-8, 2022, proceedings / / Cristina Alcaraz [and three others] (editors) |
| Pubbl/distr/stampa | Cham, Switzerland : , : Springer, , [2022] ©2022 |
| ISBN | 3-031-15777-X |
| Descrizione fisica | 1 online resource (649 pages) |
| Collana | Lecture notes in computer science ; ; Volume 13407 |
| Disciplina | 005.8 |
| Soggetti | Computer security Cryptography Telecommunication - Security measures |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Intro -- Preface -- Organization -- Contents -- Cryptography -- BS: Blockwise Sieve Algorithm for Finding Short Vectors from Sublattices -- 1 Introduction -- 1.1 Related Work -- 1.2 Our Contribution -- 1.3 Organization of the Paper -- 2 Preliminaries -- 2.1 Lattice -- 2.2 Lattice Reduction Algorithms -- 2.3 Learning with Errors -- 3 Block Sieve Algorithm -- 3.1 Basic Block Sieve Algorithm -- 3.2 Progressive Block Sieve Algorithm -- 4 Analysis of BS and PBS -- 4.1 Complexity Analysis -- 4.2 Performance on Challenge Lattices -- 4.3 Performance of PBS on LWE Instances -- 5 Conclusion -- References -- Calibrating Learning Parity with Noise Authentication for Low-Resource Devices -- 1 Introduction -- 2 Preliminaries -- 2.1 Notation -- 2.2 LPN Basics -- 2.3 Assumptions -- 3 Exploring Precision -- 3.1 Statistical Bounds -- 3.2 Computational Simulations -- 3.3 Summary of Precision Results -- 4 Exploring Key Lengths -- 4.1 Key Length Recommendation -- 4.2 Effectiveness of Known Attacks -- 4.3 Effectiveness of Guessing -- 4.4 Effectiveness of Incomplete Attacks -- 4.5 Cryptanalytic Progress -- 4.6 Summary of Key Length Results -- 5 Conclusion -- A Algorithm Pseudocode -- References -- New Results of Breaking the CLS Scheme from ACM-CCS 2014 -- 1 Introduction -- 2 Preliminaries -- 2.1 Notation -- 2.2 co-ACD Problem -- 2.3 CLS Additive Homomorphic |

Encryption Scheme -- 2.4 Lattice -- 2.5 Coppersmith's Method -- 3
Strategy for Solving Search co-ACD Problem -- 3.1 Solution for N=p1@pn -- 3.2 Experimental Results -- 4 Ciphertext-Only Attack -- 4.1 Solution for N=p1p2 -- 4.2 Experimental Results -- 5 Conclusion -- A Calculation of wN and wX -- References -- A Note on the Security Framework of Two-key DbHtS MACs -- 1 Introduction -- 2 Preliminaries -- 3 BBB-Security Framework in ch4ShenWG21 -- 4 Counter-Examples -- 4.1 Counter-Example 1.
4.2 Counter-Example 2 -- 4.3 Counter-Example 3 -- 5 The Flaw of the Proof of Theorem 1 in ch4ShenWG21 -- 6 Conclusion -- References -- Maliciously Secure Multi-party PSI with Lower Bandwidth and Faster Computation -- 1 Introduction -- 1.1 Our Contributions -- 2 Preliminaries -- 2.1 Notation -- 2.2 Security Model and Functionalities -- 2.3 Oblivious Key-Value Stores -- 3 Technical Overview -- 3.1 Overview of the Best-Known Multi-party PSI Protocol -- 3.2 Our Approach to Improve Computation Efficiency -- 3.3 Our Approach to Reduce Communication Bandwidth -- 4 Maliciously Secure Multi-party PSI Protocol -- 4.1 Sub-protocols for Sending and Aggregating Messages -- 4.2 Our PSI Protocol with Efficient Bandwidth and Computation -- 4.3 Proof of Security -- 5 An Attack Against Multi-output Extension of PSI -- A OKVS Overfitting -- References -- Conditional Cube Attacks on Full Members of KNOT-AEAD Family -- 1 Introduction -- 2 Preliminaries -- 2.1 Algebraic Degree Evaluation by Division Property -- 2.2 Conditional Cube Attack -- 2.3 KNOT-AEAD Family -- 3 A Framework of Conditional Cube Attacks for KNOT-AEAD -- 4 Conditional Cube Attacks on Full Members of KNOT-AEAD Family -- 4.1 Modeling the Division Property Propagation of Conditional S-boxes -- 4.2 Key-Recovery Attack on KNOT-AEAD (128, 256, 64) -- 4.3 Key-recovery Attacks on KNOT-AEAD (128, 384, 192) -- 5 Conclusion -- A Division Trails and Linear Descriptions of the KNOT S-box -- B Some Tables about Estimated Algebraic Degrees -- References -- Fast Fourier Orthogonalization over NTRU Lattices -- 1 Introduction -- 1.1 Our Contributions -- 1.2 Related Works -- 2 Preliminaries -- 2.1 Notations -- 2.2 Polynomial Rings and Fields -- 2.3 The Field Norm -- 2.4 The GSO and LDL Decomposition -- 2.5 The Fast Fourier Orthogonalization and LDL Tree -- 2.6 NTRU Lattices -- 2.7 Discrete Gaussians.
3 Fast Fourier Orthogonalization over NTRU Lattices -- 3.1 The Cyclotomic Field $Q[x]/(xn+1)$ -- 3.2 The Cyclotomic Field $Q[x]/(xn-xn/2+1)$ -- 4 Application to FALCON -- 4.1 Intel i7-4790 -- 4.2 ARM Cortex M4 -- 5 Conclusion -- A Proof of Theorem 2 -- References -- Secure Sketch and Fuzzy Extractor with Imperfect Randomness: An Information-Theoretic Study -- 1 Introduction -- 1.1 Our Contributions -- 1.2 Related Work -- 1.3 Paper Organization -- 2 Preliminaries -- 2.1 Secure Sketch -- 2.2 Fuzzy Extractor -- 2.3 Randomness Extractor -- 3 Security Analysis of Existing Sketch Sketches with Imperfect Randomness -- 3.1 Code Offset-Based Construction -- 3.2 Permutation-Based Secure Sketch -- 3.3 Fuzzy Vault-Based Secure Sketch -- 4 Security Analysis of Existing Fuzzy Extractors with Imperfect Randomness -- 5 Further Discussions on Fuzzy Extractors with Imperfect Randomness Based on Two-source Extractor -- 5.1 Fuzzy Extractor Based on Length-Consistent Secure Sketch and Two-Source Extractor -- 5.2 Fuzzy Extractor Based on Length-Inconsistent Secure Sketch and Two-Source Extractor -- 6 Conclusion -- A Appendix -- A.1 Proof of Theorem 1 -- A.2 Proof of Lemma 5 -- References -- Tight Analysis of Decryption Failure Probability of Kyber in Reality -- 1 Introduction -- 2 Preliminaries -- 2.1 Kyber -- 2.2 Distributions on R -- 3 Analysis of Decryption Failure

Probability -- 3.1 Decryption Failures -- 3.2 Formula Derivation -- 3.3
The Deviation Between the Theoretical Failure Probability and the Actual
Failure Probability -- 4 Experiment and Sample Test -- References --
Authentication -- Improving Deep Learning Based Password Guessing
Models Using Pre-processing -- 1 Introduction -- 1.1 Related Work --
1.2 Our Contributions -- 2 Background -- 2.1 LSTM Based Models --
2.2 PassGAN -- 3 Preliminaries -- 3.1 Datasets -- 3.2 Ethical
Considerations.
4 Preprocessing Methods -- 4.1 Important Abbreviations -- 4.2
Character Feature Based Encoding Method -- 4.3 Refined PCFG -- 4.4
PassGAN Using PCFG for Preprocessing -- 4.5 Chunk+PCFG
Preprocessing Method -- 5 Experiments -- 5.1 Attacking Strategies
Design -- 5.2 Evaluation Results -- 6 Conclusion -- 1 Some Statistics
About User-Chosen Passwords -- 2 Exploratory Experiments --
References -- Exploring Phone-Based Authentication Vulnerabilities in
Single Sign-On Systems -- 1 Introduction -- 2 Background and Related
Work -- 3 Understanding PBA Goals, Options, and Impacts -- 3.1
Threat Model and Experiment Setup -- 3.2 Impact of Malicious Relying
Party Sites -- 3.3 Timing Attacks on Unassociated PBA Approvals -- 3.4
Observable Characteristics of the Attack Scenarios -- 4 User Study and
Findings -- 4.1 IRB Process and Participant Recruiting -- 4.2
Experimental Setup -- 4.3 Participant Responses to the Malicious
Relying Party Scenario -- 4.4 Participant Responses to Timing Attack
Scenario -- 4.5 Participant Feedback and Study Limitations -- 4.6
Potential Mitigations for Deployment -- 5 Concluding Remarks --
References -- FRACTAL: Single-Channel Multi-factor Transaction
Authentication Through a Compromised Terminal -- 1 Introduction --
2 Scenario and Adversary Model -- 2.1 Scenario -- 2.2 Adversarial
Model -- 3 Protocol Description -- 3.1 Basic Protocol Flow -- 3.2
Scenario #1 -- 3.3 Scenario #2 -- 4 Security Considerations -- 4.1
Security Features -- 4.2 Formal Security Analysis via ProVerif -- 5
Implementation and Performance Assessment -- 5.1 Implementation
Details -- 5.2 Experimental Performance Assessment -- 6 Related Work
and Qualitative Comparison -- 7 Conclusion -- References -- Privacy
and Anonymity -- Lightweight and Practical Privacy-Preserving Image
Masking in Smart Community -- 1 Introduction -- 2 Related Work -- 3
Preliminaries.
3.1 Yolo v5 Object Detection Algorithm -- 3.2 ChaCha20-Poly1305
Stream Encryption Algorithm -- 3.3 Bilinear Map -- 3.4 Proxy Re-
encryption -- 4 Our Proposed Scheme -- 4.1 Preparation and Image
Pre-processing Phase -- 4.2 Membrane Generation and Image Masking
Phase -- 4.3 Proxy Re-encryption Phase -- 4.4 Image Recovery Phase
-- 5 Evaluation and Results -- 5.1 Evaluation Setup -- 5.2 Findings and
Results -- 5.3 Efficiency Analysis -- 5.4 Security Analysis -- 6
Conclusions -- References -- Using Blockchains for Censorship-
Resistant Bootstrapping in Anonymity Networks -- 1 Introduction -- 2
Background -- 2.1 Tor Network -- 2.2 Blockchain Network -- 2.3
Public Key Encryption -- 2.4 Elliptic Curve Diffie-Hellman -- 3
Overview -- 3.1 System Model -- 3.2 Threat Model -- 3.3 Design Goals
-- 4 Antiblok Details -- 4.1 Client Request -- 4.2 BridgeDB Response
-- 4.3 Circuit Creation -- 5 Security -- 6 Evaluation -- 6.1
Experimental Setup -- 6.2 Functionality Evaluation -- 7 Discussion -- 8
Conclusion -- References -- Repetitive, Oblivious, and Unlinkable SkNN
Over Encrypted-and-Updated Data on Cloud -- 1 Introduction -- 1.1
Background -- 1.2 Motivations -- 1.3 Possible Solutions and Technical
Challenges -- 1.4 Paper Organization -- 2 Related Work -- 2.1 SkNN
-- 2.2 Privacy-Preserving Range Querying -- 3 Problem Formulation --
3.1 System Model -- 3.2 Threat Model -- 3.3 Design Objectives -- 4

The Proposed Space Encoding -- 5 The Proposed Scheme ROU -- 5.1
Overview -- 5.2 Index Building -- 5.3 Token Generation -- 5.4 Query
Processing -- 5.5 Result Verification -- 6 Privacy Analysis -- 6.1
Data/Index/Token Privacy -- 6.2 Obliviousness -- 6.3 Unlinkability --
6.4 Exclusiveness -- 7 Performance Analysis -- 7.1 Experiment
Settings -- 7.2 Index Building -- 7.3 Token Generation -- 7.4 Query
Processing -- 7.5 Result Verification -- 7.6 Comparison -- 8
Conclusions.
References.
