1. Record Nr. UNINA9911019455103321

Autore	Tyagi Amit Kumar
Titolo	Automated Secure Computing for Next-Generation Systems
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2024 ©2024
ISBN	9781394213948 1394213948 9781394213924 1394213921
Edizione	[1st ed.]
Descrizione fisica	1 online resource (468 pages)
Disciplina	005.8
Soggetti	Computer security
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record. Chapter 4 Artificial Intelligence-Blockchain-Enabled-Internet of Things-Based Cloud Applications for Next-Generation Society
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- Preface -- Acknowledgements -- Part 1: Fundamentals -- Chapter 1 Digital Twin Technology: Necessity of the Future in Education and Beyond -- 1.1 Introduction -- 1.2 Digital Twins in Education -- 1.2.1 Virtual Reality for Immersive Learning -- 1.2.2 Delivery of Remote Education -- 1.2.3 Replication of Real-World Scenarios -- 1.2.4 Promote Intelligences and Personalization -- 1.3 Examples and Case Studies -- 1.3.1 Examples of DTT in Education -- 1.3.2 Digital Twin-Based Educational Systems -- 1.4 Discussion -- 1.5 Challenges and Limitations -- 1.5.1 Technical Challenges -- 1.5.2 Pedagogical Challenges -- 1.5.3 Ethical and Privacy Concerns -- 1.5.4 Future Research Directions -- 1.6 Conclusion -- References -- Chapter 2 An Intersection Between Machine Learning, Security, and Privacy -- 2.1 Introduction -- 2.2 Machine Learning -- 2.2.1 Overview of Machine Learning -- 2.2.2 Machine Learning Stages: Training and Inference -- 2.3 Threat Model -- 2.3.1 Attack Model of Machine Learning -- 2.3.2 Trust Model -- 2.3.3 Machine Learning Capabilities in a Differential Environment -- 2.3.4 Opposite Views of Machine Learning in Security -- 2.4 Training in a Differential

Environment -- 2.4.1 Achieving Integrity -- 2.5 Inferring in Adversarial Attack -- 2.5.1 Combatants in the White Box Model -- 2.5.2 Insurgencies in the Black Box Model -- 2.6 Machine Learning Methods That Are Sustainable, Private, and Accountable -- 2.6.1 Robustness of Models to Distribution Drifts -- 2.6.2 Learning and Inferring With Privacy -- 2.6.3 Fairness and Accountability in Machine Learning -- 2.7 Conclusion -- References -- Chapter 3 Decentralized, Distributed Computing for Internet of Things-Based Cloud Applications -- 3.1 Introduction to Volunteer Edge Cloud for Internet of Things Utilising Blockchain.
3.2 Significance of Volunteer Edge Cloud Concept -- 3.3 Proposed System -- 3.3.1 Smart Contract -- 3.3.2 Order Task Method -- 3.3.3 KubeEdge -- 3.4 Implementation of Volunteer Edge Control -- 3.4.1 Formation of a Cloud Environment -- 3.5 Result Analysis of Volunteer Edge Cloud -- 3.6 Introducing Blockchain-Enabled Internet of Things Systems Using the Serverless Cloud Platform -- 3.7 Introducing Serverless Cloud Platforms -- 3.7.1 IoT Systems -- 3.7.2 JointCloud -- 3.7.3 Computing Without Servers -- 3.7.4 Oracle and Blockchain Technology -- 3.8 Serverless Cloud Platform System Design -- 3.8.1 Aim and Constraints -- 3.8.2 Goals and Challenges -- 3.8.3 HCloud Connections -- 3.8.4 Data Sharing Platform -- 3.8.5 Cloud Manager -- 3.8.6 The Agent -- 3.8.7 Client Library -- 3.8.8 Witness Blockchain -- 3.9 Evaluation of HCloud -- 3.9.1 CPU Utilization -- 3.9.2 Cost Analysis -- 3.10 HCloud-Related Works -- 3.10.1 Serverless -- 3.10.2 Efficiency -- 3.11 Conclusion -- References -- Chapter 4 Artificial Intelligence-Blockchain-Enabled-Internet of Things-Based Cloud Applications for Next-Generation Society -- 4.1 Introduction -- 4.2 Background Work -- 4.3 Motivation -- 4.4 Existing Innovations in the Current Society -- 4.5 Expected Innovations in the Next-Generation Society -- 4.6 An Environment with Artificial Intelligence-Blockchain-Enabled-Internet of Things-Based Cloud Applications -- 4.7 Open Issues in Artificial Intelligence-Blockchain-Enabled-Internet of Things-Based Cloud Applications -- 4.8 Research Challenges in Artificial Intelligence-Blockchain-Enabled-Internet of Things-Based Cloud Applications -- 4.9 Legal Challenges in Artificial Intelligence-Blockchain-Enabled-Internet of Things-Based Cloud Applications -- 4.10 Future Research Opportunities Towards Artificial Intelligence-Blockchain-Enabled-Internet of Things-Based Cloud Applications.
4.11 An Open Discussion -- 4.12 Conclusion -- References -- Chapter 5 Artificial Intelligence for Cyber Security: Current Trends and Future Challenges -- 5.1 Introduction: Security and Its Types -- 5.1.1 Human Aspects of Information Security -- 5.2 Network and Information Security for Industry 4.0 and Society 5.0 -- 5.2.1 Industry 4.0 vs Society 5.0 -- 5.2.2 Industry 4.0 to Society 5.0 -- 5.3 Internet Monitoring, Espionage, and Surveillance -- 5.4 Cyber Forensics with Artificial Intelligence and without Artificial Intelligence -- 5.5 Intrusion Detection and Prevention Systems Using Artificial Intelligence -- 5.6 Homomorphic Encryption and Cryptographic Obfuscation -- 5.7 Artificial Intelligence Security as Adversarial Machine Learning -- 5.8 Post-Quantum Cryptography -- 5.9 Security and Privacy in Online Social Networks and Other Sectors -- 5.10 Security and Privacy Using Artificial Intelligence in Future Applications/Smart Applications -- 5.11 Security Management and Security Operations Using Artificial Intelligence for Society 5.0 and Industry 4.0 -- 5.11.1 Implementation on the Internet of Things and Protecting Data in IoT Connected Devices -- 5.12 Digital Trust and Reputation Using Artificial Intelligence -- 5.13 Human-Centric Cyber Security Solutions -- 5.14 Artificial Intelligence-Based Cyber Security Technologies and Solutions -- 5.15

Home Automation -- 14.3 Proposed Solution -- 14.3.1 Technological Decisions -- 14.3.2 Hardware Decision -- 14.3.3 Module Overview -- 14.4 Implementation -- 14.5 Results -- 14.6 Conclusion and Future Work -- References -- Chapter 15 Machine Learning-Based Solutions for Internet of Things-Based Applications -- 15.1 Introduction -- 15.2 IoT Ecosystem -- 15.2.1 IoT Devices -- 15.2.2 IoT Gateways -- 15.2.3 IoT Platforms.
15.2.4 IoT Applications.

Sommario/riassunto

AUTOMATED SECURE COMPUTING FOR NEXT-GENERATION SYSTEMS This book provides cutting-edge chapters on machine-empowered solutions for next-generation systems for today's society. Security is always a primary concern for each application and sector. In the last decade, many techniques and frameworks have been suggested to improve security (data, information, and network). Due to rapid improvements in industry automation, however, systems need to be secured more quickly and efficiently. It is important to explore the best ways to incorporate the suggested solutions to improve their accuracy while reducing their learning cost. During implementation, the most difficult challenge is determining how to exploit AI and ML algorithms for improved safe service computation while maintaining the user's privacy. The robustness of AI and deep learning, as well as the reliability and privacy of data, is an important part of modern computing. It is essential to determine the security issues of using AI to protect systems or ML-based automated intelligent systems. To enforce them in reality, privacy would have to be maintained throughout the implementation process. This book presents groundbreaking applications related to artificial intelligence and machine learning for more stable and privacy-focused computing. By reflecting on the role of machine learning in information, cyber, and data security, Automated Secure Computing for Next-Generation Systems outlines recent developments in the security domain with artificial intelligence, machine learning, and privacy-preserving methods and strategies. To make computation more secure and confidential, the book provides ways to experiment, conceptualize, and theorize about issues that include AI and machine learning for improved security and preserve privacy in next-generation-based automated and intelligent systems. Hence, this book provides a detailed description of the role of AI, ML, etc., in automated and intelligent systems used for solving critical issues in various sectors of modern society. Audience Researchers in information technology, robotics, security, privacy preservation, and data mining. The book is also suitable for postgraduate and upper-level undergraduate students.

2. Record Nr. UNINA9910483568903321

Titolo	Flexible and Efficient Information Handling : 23rd British National Conference on Databases, BNCOD 23, Belfast, Northern Ireland, UK, July 18-20, 2006, Proceedings / / edited by David Bell, Jun Hong
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2006
ISBN	3-540-35971-0
Edizione	[1st ed. 2006.]
Descrizione fisica	1 online resource (XVI, 296 p.)
Collana	Lecture Notes in Computer Science, , 1611-3349 ; ; 4042
Altri autori (Persone)	BellDavid HongJun
Disciplina	005.74
Soggetti	Data structures (Computer science) Information theory Database management Information storage and retrieval systems Application software Data Structures and Information Theory Database Management Information Storage and Retrieval Computer and Information Systems Applications
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Invited Papers -- The Lixto Project: Exploring New Frontiers of Web Data Extraction -- An Overview of a Scalable Distributed Database System SD-SQL Server -- Data Modelling and Architectures and Transaction Management -- Using UML's Sequence Diagrams for Representing Execution Models Associated to Triggers -- An Experimental Consideration of the Use of the TransrelationalTMModel for Data Warehousing -- Reducing Sub-transaction Aborts and Blocking Time Within Atomic Commit Protocols -- Data Integration and Interoperability and Information Retrieval -- Query Translation for Distributed Heterogeneous Structured and Semi-structured Databases -- Information Retrieval Evaluation with Partial Relevance Judgment -- Sources of Incompleteness in Grid Publishing -- Query Processing and

Optimization -- Privacy Preservation and Protection by Extending Generalized Partial Indices -- On the Optimal Ordering of Maps, Selections, and Joins Under Factorization -- An I/O Optimal and Scalable Skyline Query Algorithm -- Data Mining -- A Novel Clustering Method Based on Spatial Operations -- A FP-Tree-Based Method for Inverse Frequent Set Mining -- SC-Tree: An Efficient Structure for High-Dimensional Data Indexing -- A Heterogeneous Computing System for Data Mining Workflows -- An Efficient System for Detecting Outliers from Financial Time Series -- Data Warehousing and Decision-Support Systems -- Efficient Update of Data Warehouse Views with Generalised Referential Integrity Differential Files -- SAGA: A Combination of Genetic and Simulated Annealing Algorithms for Physical Data Warehouse Design -- Data Streaming -- Scheduling Strategies and Their Evaluation in a Data Stream Management System -- The Anatomy of a Stream Processing System -- Poster Papers -- Analyzing the Genetic Operations of an Evolutionary QueryOptimizer -- An Evidential Approach to Integrating Semantically Heterogeneous Distributed Databases -- Interoperability and Integration of Independent Heterogeneous Distributed Databases over the Internet -- Trust Obstacle Mitigation for Database Systems -- Towards a More Reasonable Generalization Cost Metric for K-Anonymization -- Verification Theories for XML Schema -- DTD-Driven Structure Preserving XML Compression -- A Scalable Solution to XML View Materialization on the Web -- A Rule-Based Data Warehouse Model -- Enriching Data Warehouse Dimension Hierarchies by Using Semantic Relations -- A Composite Approach for Ontology Mapping -- Towards the Completion of Expressing and Checking Inheritance Constraints in UML -- A New Trajectory Indexing Scheme for Moving Objects on Road Networks.

Sommario/riassunto

This book constitutes the refereed proceedings of the 23rd British National Conference on Databases, BNCOD 23, held in Belfast, Northern Ireland, July 2006. The volume presents 12 revised full papers and 6 revised short papers, together with 2 invited lectures and 13 poster papers. Topical sections include data modelling and architectures and transaction management, data integration and interoperability and information retrieval, query processing and optimisation, data mining, data warehousing and more.