

1. Record Nr.	UNISA996464510103316
Titolo	Data-driven mining, learning and analytics for secured smart cities : trends and advances // Chinmay Chakraborty, Jerry Chun-Wei Lin, Mamoun Alazab, editors
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-72139-6
Descrizione fisica	1 online resource (390 pages)
Collana	Advanced Sciences and Technologies for Security Applications
Disciplina	307.760285
Soggetti	Smart cities
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Contents -- About the Editors -- Analytics of Multiple-Threshold Model for High Average-Utilization Patterns in Smart City Environments -- 1 Introduction -- 2 Review of Related Works -- 2.1 High Utility Itemset Mining (HUIM) -- 2.2 High Average-Utility Itemset Mining -- 2.3 Multi-threshold Pattern Mining Works -- 3 Background of HAUIM and Problem Statement -- 4 Designed Model and Pruning Strategies -- 4.1 Developed Closure Property -- 4.2 Proposed Multi-HAUIM Model -- 4.3 Designed Strategy 1 -- 4.4 Designed Strategy 2 -- 5 Experimental Evaluation -- 5.1 Runtime Evaluation -- 5.2 Evaluation of Candidate Size -- 5.3 Evaluation of the Used Memory -- 5.4 Evaluation of Scalability -- 6 Conclusion and Future Work -- References -- Artificial Intelligence and Machine Learning for Ensuring Security in Smart Cities -- 1 Introduction -- 1.1 Smart City Applications -- 1.2 Technologies Used in Smart Cities and Integrated Technology in the Smart City-Edge/Cloud -- 1.3 Security Loophole in Smart Cities -- 1.4 AI/ML Based Counter Measures -- 1.5 Open Issues, Challenges and Recommendation -- 1.6 Conclusion and Future Scope -- References -- Smart Cities Ecosystem in the Modern Digital Age: An Introduction -- 1 Introduction -- 2 Smart Cities Concepts -- 3 Smart Cities Applications -- 4 Importance of Big Data for Smart Cities -- 5 Blockchain for Smart Cities -- 6 Machine Learning for Smart Cities -- 7 Discussion -- 7.1 Challenges

on the Implementation of Smart City -- 8 Trends and Future Directions -- 9 Conclusions -- References -- A Reliable Cloud Assisted IoT Application in Smart Cities -- 1 Introduction -- 2 Literature Survey -- 3 Previous Work -- 4 Proposed Architecture -- 5 Analysis of the Contribution -- 6 Future Work -- 7 Conclusion -- References -- Lightweight Security Protocols for Securing IoT Devices in Smart Cities. 1 Introduction to Smart City Initiatives -- 2 Case Study: Smart Singapore -- 3 Smart City Backbone: Internet-of-Things (IoT) -- 4 The Requirement of a Lightweight Security Solution -- 5 Lightweight Block Ciphers -- 6 Lightweight Stream Ciphers and Hash Functions -- 7 Opportunities and Challenges -- 8 Conclusion and Future Scope -- References -- Blockchain Integrated Framework for Resolving Privacy Issues in Smart City -- 1 Introduction -- 2 Overview of Blockchain -- 2.1 Types of Blockchain -- 2.2 Working Steps of Blockchain -- 2.3 Protocols -- 3 Smart City: An Overview -- 4 Security and Privacy Issues in IoT -- 5 Blockchain Usage in Smart City -- 5.1 Applications of Blockchain -- 5.2 Problem Domains in Blockchain -- 6 Proposed Architecture -- 7 Challenges and Future Research Directions -- 8 Conclusion -- References -- Field Programmable Gate Array (FPGA) Based IoT for Smart City Applications -- 1 Introduction -- 2 Artificial Intelligence (AI) and Internet of Things (IoT) for Smart Cities -- 3 FPGA for Deep Learning -- 3.1 AI and Deep Learning Applications on FPGAs -- 4 What Exactly is Field Programmable Gate Array (FPGA)? -- 4.1 Benefits of FPGAs -- 4.2 FPGAs and Artificial Intelligence -- 5 FPGA Based IoT Architecture and Applications for Secured Smart Cities -- 5.1 FPGA Based IoT for Smart Homes -- 5.2 FPGA Based IoT for Data Encryption, Storage, and Security -- 5.3 FPGA Based IoT for Safety and Surveillance Applications -- 6 FPGA Based IoT Architecture and Applications for Healthcare Analytics -- 6.1 Advantages of Programmable Logic -- 6.2 Medical Applications for Programmable Logic -- 7 IoT Architecture and Its Applications for Urban Planning Based on FPGA -- 7.1 FPGA Based IoT for 5G and Beyond -- 7.2 FPGA Based IoT for Energy Management -- 8 Further Applications of FPGA Based IoT for Smart Cities. 8.1 FPGA Based Neuroscience and Its IoT Applications -- 8.2 FPGA Implementation of Automatic Monitoring Systems for Industrial Applications -- 8.3 Reconfigurable Embedded Web Services Based on FPGA -- 8.4 Smart Sensor Based on SoCs for Incorporation in Industrial Internet of Things -- 8.5 FPGA Based Health Monitoring System -- 9 Futuristic Applications and Challenges of FPGA Based IoT for Smart Cities -- 10 Conclusion -- References -- Modified Transaction Against Double-Spending Attack Using Blockchain to Secure Smart Cities -- 1 Introduction -- 1.1 Work Contribution -- 2 Proof of Work Classes -- 2.1 Challenge-Response -- 2.2 Solution-Verification -- 3 Distribution and Cryptographic Attacks -- 3.1 Characteristics of Uniform Distribution -- 3.2 Cryptographic Attacks -- 4 Blockchain Overview -- 4.1 Bitcoin -- 4.2 Public Ledger -- 4.3 Blockchain Mechanism -- 4.4 Consensus Algorithm -- 4.5 PoW (Proof of Work) -- 4.6 PoS (Proof of Stake) -- 5 Basic Blockchain Design -- 6 Modes of Operation -- 6.1 Electronic Code Book (ECB) -- 6.2 Cipher Block Chaining (CBC) -- 6.3 Cipher Feedback (CFB) -- 6.4 Output Feedback (OFB) -- 6.5 Counter (CTR) -- 7 Modified Blockchain Design -- 8 Performance Analysis -- 9 Conclusion -- References -- Smart City Ecosystem Opportunities: Perspectives and Challenges -- 1 Introduction -- 2 Smart City Layers -- 3 Smart City Value Creators -- 4 Related Works -- 5 Role of Big Data in Smart City -- 5.1 Big Data Layers in Smart City Ecosystem -- 5.2 Issues in Smart City Big Data -- 6 Role of Internet of Things (IOT) in Smart City Ecosystem -- 6.1 IOT

Open Issues in Smart City -- 6.2 Communication Vulnerabilities -- 6.3 Physical Security Issues and Remedies in IOT -- 7 Role of Artificial Intelligence (AI) in Smart City Ecosystem -- 7.1 Applications of Artificial Intelligence (AI) in Smart City Ecosystem.
7.2 Application of Artificial Intelligence for Smart Citizens or Individuals -- 7.3 Artificial Intelligence (AI) Challenges in Building the Smart City -- 8 Role of Crowdsourcing in Smart Cities -- 9 Conclusion -- References -- Data-Driven Generative Design Integrated with Hybrid Additive Subtractive Manufacturing (HASM) for Smart Cities -- 1 Introduction -- 2 Generative Design Approach -- 3 Generative Design Applications -- 4 Hybrid Additive Subtractive Manufacturing and Generative Design for Smart Cities -- 5 Generative Design Integrated with Hybrid Additive Subtractive Manufacturing -- 6 Case Study: Generate Design of a Chassis for a Drone -- 7 Conclusion and Future Scope -- References -- End-to-End Learning for Autonomous Driving in Secured Smart Cities -- 1 Introduction -- 2 Background and Related Works -- 2.1 End-To-End Learning Paradigm -- 2.2 Modular Pipeline Paradigm -- 2.3 Adversarial Attacks and Defenses -- 2.4 Building upon and Contrasting with Related Works -- 3 Proposed Model: Temporal Conditional Imitation Learning (TCIL) -- 4 Experiment and Results -- 4.1 Dataset -- 4.2 Training -- 4.3 Evaluation of System Performance -- 4.4 Comparison with the State-Of-Art -- 4.5 Ongoing Work: Evaluation of Defense Against Adversarial Attacks -- 5 Conclusion and Future Research Direction -- 6 Future Research Directions -- 6.1 Improving Dataset and Learning Method -- 6.2 Improving Defense Against Adversarial Attacks -- References -- Smart City Technologies for Next Generation Healthcare -- 1 Introduction -- 2 Smart City-An Overview -- 2.1 Smart People -- 2.2 Smart Infrastructure -- 2.3 Smart Economy -- 2.4 Smart Mobility -- 2.5 Smart Environment -- 2.6 Smart Healthcare -- 2.7 Smart Education -- 2.8 Smart Governance -- 3 Layers of Smart City Ecosystem -- 4 Smart City Ecosystem- Layer-Wise Protocols.
5 Next Generation Healthcare and Internet of Healthcare Things (IoHT) -- 5.1 Device Connectivity -- 5.2 Data Processing -- 5.3 Cloud Computing -- 5.4 Edge Computing -- 5.5 Security and Privacy of Healthcare Data -- 6 Integration of Smart Healthcare with Other Smart City Components -- 6.1 Infrastructural Collaboration -- 6.2 Smart Education -- 6.3 Medical Waste Management -- 6.4 Anytime, Anywhere Services -- 7 Open Issues, Challenges and Recommendations -- 8 Conclusion -- References -- An Investigation on Personalized Point-of-Interest Recommender System for Location-Based Social Networks in Smart Cities -- 1 Introduction -- 2 POI Based Recommendation Systems Based on Topographical Features -- 2.1 Mining Topographical Impact for Collaborative POI Recommendation -- 2.2 Exploring Geographical Inclinations for POI Recommendation -- 2.3 Integrating Matrix Factorization with Joint Geographical Modeling (GeoMF) Method for POI Recommender System -- 2.4 A Ranking Based Geographical Factorization (Rank-GeoMF) Approach for POI Recommender System -- 2.5 Integration of Geographical Impact with POI Recommender Systems -- 2.6 General Topographical Probabilistic Based Factor Approach for Point of Interest Recommendation -- 2.7 Exploiting Geographical Neighborhood Characteristics for POI Recommender System -- 3 POI Based Recommendation Systems Based on Temporal Features -- 3.1 Time-Aware POI Recommendation -- 3.2 A Probabilistic Framework to Exploit Correlation of Temporal Impact in a Time-Aware Locale Recommender System -- 4 POI Based Recommendation Systems Based on User Behavior -- 4.1 Exploiting Sequential Influence for Location

Recommendation (LORE) -- 4.2 Joint Modeling Behavior Based on Check in Approach -- 4.3 Exploiting User Check-in Data for Location Recommendation in LSBN.

4.4 Extraction of User Check-in Behavior with Random Walk for Urban POI Recommender Systems.
