1. Record Nr. UNISA996466321703316

Titolo	Internet of Things, Smart Spaces, and Next Generation Networks and Systems [[electronic resource]] : 19th International Conference, NEW2AN 2019, and 12th Conference, ruSMART 2019, St. Petersburg, Russia, August 26–28, 2019, Proceedings / / edited by Olga Galinina, Sergey Andreev, Sergey Balandin, Yevgeni Koucheryavy
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-30859-6
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XV, 759 p. 438 illus., 235 illus. in color.)
Collana	Computer Communication Networks and Telecommunications ; ; 11660
Disciplina	004.6
Soggetti	Computer communication systems Special purpose computers Coding theory Information theory Application software Mathematical statistics Computer Communication Networks Special Purpose and Application-Based Systems Coding and Information Theory Information Systems Applications (incl. Internet) Probability and Statistics in Computer Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- New Generation of Smart Services -- Proactive Context-Aware IoT-Enabled Waste Management -- 1 Introduction -- 2 Related Work -- 3 ProAdaWM Context Modeling and Reasoning -- 3.1 Context Model -- 3.2 Context Reasoning -- 4 ProAdaWM System Architecture -- 5 Validation and Results -- 5.1 Implementation -- 5.2 Case Study -- 5.3 Results and Discussion -- 6 Conclusions and Future Work -- References -- Investigation of the IoT Device Lifetime with Secure Data Transmission -- Abstract -- 1 Introduction -- 2 Review of Existing Approaches for

Evaluation of the IoT Device Lifetime -- 3 Analysis of Requirements for Modern IoT Systems -- 4 Estimation of Power Consumption and Lifetime of IoT Device -- 5 Calculation of the IoT Device Lifetime Taking into Account the Time for Data Encryption and Decryption -- 6 Calculation of the IoT Device Lifetime Using the Proposed Solution -- 7 Conclusions -- 8 Future Work -- References -- Compression Methods for Microclimate Data Based on Linear Approximation of Sensor Data -- Abstract -- 1 Introduction -- 2 Lightweight Compression Methods for Sensor Data -- 2.1 Lossy Methods and Lossless Methods -- 2.2 Lossy Compression Algorithms Based on Linear Approximation -- 2.3 Transform Based Compression Methods -- 3 Testing the Algorithms with Real Microclimate Data -- 4 Conclusions and Future Work -- References -- An Open Multimodal Mobility Platform Based on Distributed Ledger Technology -- Abstract -- 1 Introduction -- 2 Background -- 2.1 Distributed Ledger Technology -- 2.2 IOTA -- 3 Multimodal Mobility Platform -- 3.1 Mobility Platform Use Case -- 3.2 Multi-channel Architecture -- 3.3 Random Access Authenticated Messaging -- 3.4 Seed Management -- 4 Discussion and Conclusion -- Acknowledgements -- References -- Semantic Interoperability in IoT: A Systematic Mapping.
1 Introduction -- 2 Background -- 3 Research Method -- 3.1 Selected Works -- 4 Synthesis of Data and Discussion -- 5 Conclusions -- References -- Malware Squid: A Novel IoT Malware Traffic Analysis Framework Using Convolutional Neural Network and Binary Visualisation -- Abstract -- 1 Introduction -- 2 Related Works -- 3 The Proposed Method -- 3.1 Network Traffic Collection -- 3.2 Traffic Visualisation -- 3.3 Malware Traffic Analysis -- 4 Experimental Result -- 4.1 Experiment Setup -- 4.2 Experiments Results and Analysis -- 4.3 ASCII Characters Frequency Throughout Traffic Results and Analysis -- 4.4 Comparison -- 5 Conclusion -- Acknowledgement -- References -- Context- and Situation Prediction for the MyAQI Urban Air Quality Monitoring System -- 1 Introduction -- 2 Background -- 3 Air Quality Context and Prediction Model -- 3.1 Air Quality Attributes -- 3.2 Extended External Attributes -- 3.3 User Attributes -- 3.4 Situation Reasoning -- 3.5 Prediction Model -- 4 System Architecture and Implementation -- 4.1 System Architecture -- 4.2 Implementation -- 5 Experiments and Results -- 5.1 Experiments -- 5.2 Results -- 6 Conclusion -- References -- Data Mining Algorithms Parallelization in Logic Programming Framework for Execution in Cluster -- Abstract -- 1 Introduction -- 2 Logical Programming Features and Related Works -- 3 Implementation of Data Mining Algorithm in Logic Programming Framework -- 3.1 Data Mining Algorithm Representation as a Function -- 3.2 Data Mining Algorithm Representation in Logic Programing Framework -- 3.3 Basic Features for the Implementation of Data Mining Algorithms in Logic Programing Framework -- 4 Parallelization of Naive Bayes Algorithm in Logic Programming Framework -- 5 Performance Evaluation -- 6 Conclusion -- Acknowledgments -- References.
Application of an Autonomous Object Behavior Model to Classify the Cybersecurity State -- Abstract -- 1 Introduction -- 2 Problem Statement -- 3 The Proposed Approach -- 4 Experiment -- 5 Conclusion -- References -- Decision Support Based on Human-Machine Collective Intelligence: Major Challenges -- Abstract -- 1 Introduction -- 2 Related Work -- 2.1 "Programming" of Human-Machine Computing Processes -- 2.2 Self-organization -- 3 Vision of the Decision Support Environment Based on Human-Machine Collective Intelligence -- 3.1 Positioning -- 3.2 Users and Their Profiles -- 4 Major Challenges -- 5 Conclusion -- Acknowledgements -- References -- FaceWallGraph: Using Machine Learning for Profiling User Behaviour

from Facebook Wall -- Abstract -- 1 Introduction -- 2 Related Works -- 3 The Proposed Method -- 3.1 Information Collection from Facebook -- 3.2 Information Extraction and Classification -- 4 Experimental Results -- 4.1 The Happy N-Gram Graph -- 4.2 The Sad N-Gram Graph -- 4.3 The Love N-Gram Graph -- 4.4 The Disappointed N-Gram Graph -- 5 Applications -- 6 Conclusion -- References -- Multi-agent Approach to Computational Resource Allocation in Edge Computing -- Abstract -- 1 Introduction -- 2 Problem Formulating -- 2.1 Understanding of Streaming Data in IoT -- 2.2 Mathematical Model -- 3 Multi-agent Approach to Distributed Processing of the Streaming Data -- 3.1 Agent-Based Software Architecture for Distributed Data Processing Systems -- 3.2 Multi-agent Anytime Algorithm of Computational Resource Allocation -- 4 Experimental Confirmation of the Proposed Algorithm -- 4.1 An Example of a Static Resource Allocation -- 4.2 An Example of a Dynamic Resource Allocation -- 4.3 Further Research Prospects -- 4.4 Intellectual System for Assessing the Current State of the Node -- 4.5 Adaptive Resource Allocation Algorithm.
4.6 Neural Network Prediction of Resource -- 5 Conclusion -- References -- The Use of Context-Dependent Modelling for the Construction of an Anti-fraud System in Transport -- Abstract -- 1 Introduction -- 2 Related Works -- 3 Formulation of the Problem -- 4 Solution Architecture -- 5 Personal Characteristics of User Behavior -- 5.1 Personal Characteristics of the User Route -- 5.2 Global Environment Characteristics -- 6 Experimental Results -- 7 Conclusions -- Funding Statement -- References -- An Approach to the Analysis of the Vehicle Movement on the Organization Territory -- Abstract -- 1 Introduction -- 2 Related Works -- 3 Description of the Approach -- 3.1 The Source Data -- 3.2 Data Preprocessing Step -- 3.3 Detection of the Typical Routes and Anomalies in the Historical Data -- 3.4 Anomaly Detection in the Real Time Mode -- 4 Experiments and Approach Evaluation -- 5 Conclusion -- Acknowledgements -- References -- Building Blocks of an Innovative Approach to Education in the Field of Cyber Operations in Smart Environment -- Abstract -- 1 Introduction -- 2 Model of an Innovative Approach to Education in the Field of Cyber Operations -- 2.1 Cyber Operations Modelling -- 2.2 Information Support in the Field of Cyber Operations -- 2.3 Work Process -- 3 Illustration of an Example -- 4 Evaluation of a Model of an Innovative Approach to Education in the Field of Cyber Operations -- 4.1 Evaluation Methodology -- 4.2 Conclusions Based on the Evaluation -- 5 Conclusion -- References -- Next Generation Wired/Wireless Advanced Networks and Systems -- Channel Switching Protocols Hinder the Transition to IP World: The Pentagon Story -- Abstract -- 1 Introduction -- 2 On Requirements to Unified Capabilities -- 3 Multifunctional SoftSwitch - The Turning Point on IP-Road -- 4 On Transient DISN Architecture.
5 Conclusion. On Long-Term Channel-Packet Coexistence -- References -- Network Anomaly Detection in Wireless Sensor Networks: A Review*-10pt -- 1 Introduction -- 2 Characteristics and Security Threats in WSNs -- 3 Network Anomaly Detection in WSNs -- 4 Remarks on Developing Anomaly-Based Intrusion Detection Systems for WSNs -- 5 Conclusion -- References -- Polarization Direction Finding Method of Interfering Radio Emission Sources -- Abstract -- 1 Introduction -- 2 Polarization DF Method of Interfering Sources Analysis -- 2.1 Formulation of DF of Interfering Sources Problem -- 2.2 Polarization Direction Finding Method -- 2.3 Polarization Direction Finding Method of Interfering Sources -- 3 Polarization DF Method of Interfering Sources Simulation -- 4 Conclusion -- Acknowledgements

-- References -- Coexistence Management Approach for Densification of Randomly Deployed Low Power Nodes in TVWS Spectrum -- 1 Introduction -- 2 Previous Work and Our Contribution -- 3 System Model -- 3.1 LPN Deployment and Operational Parameters -- 3.2 Simulation Algorithms -- 4 Performance Evaluation -- 4.1 Impact of Multiple Channels Availability -- 4.2 Impact of LPN Density on Area Capacity -- 5 Conclusion -- References -- Toward an Ultra-low Latency and Energy Efficient LoRaWAN -- Abstract -- 1 Introduction -- 2 MEC/SDN Based LoRaWAN System -- 3 Performance Evaluation -- 3.1 Overview -- 3.2 Simulation Setup -- 3.3 Simulation Results -- 4 Conclusion -- Acknowledgement -- References -- Novel AI-Based Scheme for Traffic Detection and Recognition in 5G Based Networks -- Abstract -- 1 Introduction -- 2 Proposed SDN/NFV System Structure -- 3 Input Data Set -- 4 Proposed RNN -- 5 Network Model -- 6 Performance Evaluation -- 7 Conclusion -- Acknowledgement -- References -- A Connectivity Game with Incomplete Information on Jammer's Location -- 1 Introduction.
2 Basic Connectivity Model.

Sommario/riassunto

This book constitutes the joint refereed proceedings of the 19th International Conference on Next Generation Teletraffic and Wired/Wireless Advanced Networks and Systems, NEW2AN 2019, and the 12th Conference on Internet of Things and Smart Spaces, ruSMART 2019. The 66 revised full papers presented were carefully reviewed and selected from 192 submissions. The papers of NEW2AN address various aspects of next-generation data networks, with special attention to advanced wireless networking and applications. In particular, they deal with novel and innovative approaches to performance and efficiency analysis of 5G and beyond systems, employed game-theoretical formulations, advanced queuing theory, and stochastic geometry, while also covering the Internet of Things, cyber security, optics, signal processing, as well as business aspects.ruSMART 2019, provides a forum for academic and industrial researchers to discuss new ideas and trends in the emerging areas. The 12th conference on the Internet of Things and Smart Spaces, ruSMART 2019, provides a forum for academic and industrial researchers to discuss new ideas and trends in the emerging areas. .