

1. Record Nr.	UNINA9910637703603321
Titolo	Ambient Intelligence—Software and Applications—13th International Symposium on Ambient Intelligence // edited by Vicente Julián, João Carneiro, Ricardo S. Alonso, Pablo Chamoso, Paulo Novais
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	9783031223563 303122356X
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (274 pages)
Collana	Lecture Notes in Networks and Systems, , 2367-3389 ; ; 603
Disciplina	004 004.019
Soggetti	Computational intelligence Artificial intelligence Computational Intelligence Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Organization -- Preface -- Contents -- Deep Learning Based Automated Chest X-ray Abnormalities Detection -- 1 Introduction -- 2 Related Works -- 3 Dataset Specifics -- 4 Approach -- 4.1 Exploratory Data Analysis -- 4.2 Data Pre-processing -- 4.3 Proposed CNN Architectures -- 4.4 2-Class Classifier Pipeline -- 5 Results -- 6 Conclusion -- References -- Acquisition and Synchronisation of Multi-source Physiological Data Using Microservices and Event-Driven Architecture -- 1 Introduction -- 2 Related Works -- 3 Design of the Architecture -- 3.1 Acquisition Devices -- 3.2 Microservices and Event-Driven-Based Architecture -- 3.3 Synchronisation Strategy -- 4 Results -- 5 Conclusions -- References -- Percutaneous Electrolysis (EPI®), a Promising Technology in the Treatment of Insertional Patellar Tendinopathy in Soccer Players -- 1 Introduction -- 2 Material and Methods -- 3 Results -- 4 Discussion and Conclusions -- References -- Ability-Centered Examination of People with Motor Impairments' Interaction with Television Towards More Accessible

Smart Home Entertainment Environments -- 1 Introduction -- 2 Related Work -- 3 Study -- 3.1 Participants -- 3.2 Motor Abilities -- 3.3 Measures -- 4 Results -- 5 Discussion -- 6 Conclusion -- References -- Discovery of Profitable Stock Price Movement Patterns from Various High Utility Pattern Mining -- 1 Introduction -- 2 Past Works -- 3 Methodology -- 3.1 Definitions -- 3.2 The Focused High Utility Mining Methods -- 4 Experiments -- 4.1 Data and Pre-processing -- 4.2 Discussions -- 5 Conclusions -- References -- Automatic Detection of Oil Spills from SAR Images Using Deep Learning -- 1 Introduction -- 2 Dataset and Methods -- 2.1 Oil Spill Dataset Description -- 2.2 Semantic Segmentation -- 2.3 Evaluation Metrics -- 3 Results -- 4 Discussion -- 5 Conclusion -- References. Intelligent Appliances for AAL Environments -- 1 Introduction -- 1.1 VirtualECare and VirtualECare2 -- 2 Intelligent Appliances -- 2.1 Virtual Appliance -- 2.2 Physical Appliance Requirements -- 3 Conclusions and Future Work -- References -- Time Series Forecasting for Improving Quality of Life and Ecosystem Services in Smart Cities -- 1 Introduction -- 2 Related Works -- 3 Forecasting Methods for Climate Data -- 3.1 Description of the Dataset -- 3.2 Algorithms for Time Series Prediction -- 4 Experiment and Results -- 5 Conclusions and Future Work Lines -- References -- Security of IoT Application Layer: Requirements, Threats, and Solutions -- 1 Introduction -- 2 Background and Motivation -- 2.1 Motivation -- 3 Security Requirements in IoT Application Layer -- 3.1 Confidentiality -- 3.2 Integrity -- 3.3 Availability -- 3.4 Authentication and Authorization -- 4 Security Threats and Solutions in IoT Application Layer -- 4.1 Focus on IoT Use Cases -- 5 Open Issues and Future Directions -- 5.1 The Lack of Comprehensive Security- and/or Privacy-Protecting Frameworks -- 5.2 Insecure Interfaces -- 5.3 Blockchain -- 5.4 Machine Learning -- 6 Conclusion -- References -- Smart Wearable Systems for the Remote Monitoring of Venous and Diabetic Foot Ulcers: State of the Art -- 1 Introduction -- 2 Methods -- 2.1 Search Strategy -- 2.2 Eligibility Criteria -- 2.3 Analysis -- 3 Results -- 3.1 State-of-the Art -- 3.2 Data Collection -- 3.3 Smart Features -- 3.4 Open Research Challenges and Limitations -- 4 Conclusions -- References -- Electronic Plush Toy as a Non-pharmacological Tool in Therapies -- 1 Introduction -- 2 State of Art -- 3 Methodology -- 4 Design and Construction -- 4.1 HW Design -- 5 Conclusions and Future Work -- References -- Federated Learning with Exponentially Weighted Moving Average for Real-Time Emotion Classification -- 1 Introduction. 2 Preliminaries -- 2.1 Multi-modal Data Stream Classification -- 2.2 Federated Learning -- 2.3 Exponentially Weighted Moving Average -- 3 Materials and Methods -- 3.1 Proposed Approach -- 3.2 Dataset Description -- 3.3 Experimental Study -- 3.4 Experimental Setup -- 3.5 Performance Metric -- 4 Results, Analysis and Discussion -- 5 Conclusion -- References -- User-Adapted Semantic Description Generation Using Natural Language Models -- 1 Introduction -- 2 Natural Language Generation Model -- 2.1 Transformers in Generative Models -- 2.2 From Fine-Tuning to Few-Shot Learning -- 3 User-Adapted Semantic Description Generation -- 3.1 Random Topic Generation -- 3.2 Theme-Based Semantic Description Generation -- 3.3 User-Adapted Text Paraphrasing -- 3.4 Case Study -- 4 Conclusions -- References -- An Integration of Packet Routing and Data Processing in Sensor Networks -- 1 Introduction -- 2 Basic Approach -- 2.1 Example Scenario -- 2.2 Design Principle -- 2.3 Packet Description -- 3 Routing Specification Language -- 4 Design and Implementation -- 4.1 Interpretation of Description Embedded in Packets -- 4.2 Invocation for Data Processing Function -- 4.3 Packet

Receiving and Forwarding -- 4.4 Current Status -- 5 Related Work -- 6 Conclusion -- References -- Quantum AI: Achievements and Challenges in the Interplay of Quantum Computing and Artificial Intelligence -- 1 Introduction -- 2 Quantum Computing and Artificial Intelligence -- 3 Quantum Artificial Intelligence -- 3.1 Data Dimension -- 3.2 Algorithmic Dimension -- 3.3 Computational Framework -- 4 Future Avenues of Research in QAI -- 5 Conclusion -- References -- An Architecture for a Coaching System to Support Type 2 Diabetic Patients -- 1 Introduction -- 2 Proposed Architecture -- 2.1 Rules Engine -- 2.2 Challenges Engine -- 2.3 Knowledge Management System -- 3 Conclusions and Future Work -- References. Machine Learning Based System for the Control and Evaluation of Programming Vulnerabilities -- 1 Introduction -- 2 Background -- 3 Proposed System -- 4 Results -- 5 Conclusion -- 6 Future Work -- References -- Quantum Optimization for IoT Security Detection -- 1 Introduction -- 2 Quantum Computing -- 3 Quantum Annealing -- 4 Qboost for IoT Security Detection (Q4IoT) -- 5 Empirical Evaluation -- 5.1 Dataset -- 5.2 Experimental Methodology -- 5.3 Results -- 6 Conclusions and Future Developments -- References -- IdeAir: IoT-Based System for Indoor Air Quality Control -- 1 Introduction -- 2 Related Work -- 3 Proposed System -- 3.1 Development Methodology -- 3.2 Results of Applying TDDM4IoT to This Case Study -- 4 Conclusions and Future Work -- References -- Automated Counting via Multicolumn Network and CytoSMART Exact FL Microscope -- 1 Introduction -- 1.1 Related Work -- 1.2 Image Processing -- 1.3 Deep Learning -- 2 Methods Network -- 2.1 Handling of the Neubauer Cell Counting Chamber -- 2.2 Data Set -- 2.3 The CNN Fundamentals -- 2.4 Data Augmentation -- 2.5 Evaluation Metrics -- 3 Experiments and Results -- 4 Analysis -- 5 Conclusion -- References -- Using Deep Learning for Implementing Paraphrasing in a Social Robot -- 1 Introduction -- 2 State of the Art -- 3 Our Approach Towards Paraphrases in Spanish -- 4 Integration in the Robot's Architecture -- 5 Evaluation -- 6 Use Case -- 7 Conclusions -- References -- Epilepsy Seizure Detection Using Low-Cost IoT Devices and a Federated Machine Learning Algorithm -- 1 Introduction -- 2 Methodology -- 2.1 Fog Computing System -- 2.2 Federated Machine Learning Process -- 3 Preliminary Results -- 4 Conclusions -- References -- Electroencephalographic Signal Processing from Brain-Computer-Interface Following Image-Based Emotion Induction -- 1 Introduction -- 2 Materials and Methods. 2.1 Electroencephalography -- 2.2 Data Acquisition and Emotiv EPOC X Device -- 2.3 Image-Based Emotion Induction and Participants -- 2.4 Experimental Design -- 2.5 Brain Activity Preprocessing -- 2.6 Analysis -- 3 Results and Discussion -- 3.1 High-Low Valence Comparison -- 3.2 High-Low Arousal Comparison -- 3.3 Multiple Comparison -- 4 Conclusions -- References -- Real-Time Algorithm Recommendation Using Meta-Learning -- 1 Introduction -- 2 Meta-Learning -- 3 Methodology -- 4 Results -- 5 Discussion and Conclusions -- References -- Author Index.

---

## Sommario/riassunto

This book presents the latest research on Ambient Intelligence including software and applications. Ambient Intelligence (Aml) is a paradigm emerging from Artificial Intelligence, where computers are used as proactive tools assisting people with their day-to-day activities, making everyone's life more comfortable. The inclusion of computational power and communication technologies in everyday objects is growing, and their embedding into our environments should be as invisible as possible. In order for Aml to be successful, human interaction with computing power and embedded systems in the

surroundings should be smooth and happen without people actually noticing it. The only awareness people should have arises from Aml: more safety, comfort and wellbeing, emerging in a natural and inherent way. ISAmI is the International Symposium on Ambient Intelligence, aiming to bring together researchers from various disciplines that constitute the scientific field of Aml to present and discuss the latest results, new ideas, projects and lessons learned.

---