

1. Record Nr.	UNINA9910523738103321
Titolo	Technological and industrial applications associated with Industry 4.0 / / Alberto Ochoa-Zezzatti, Diego Oliva, Aboul Ella Hassanien, editors
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	3-030-68663-9
Descrizione fisica	1 online resource (344 pages)
Collana	Studies in Systems, Decision and Control ; ; Volume 347
Disciplina	658.4038028563
Soggetti	Industry 4.0
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Introduction -- Contents -- Mobile Applications and Web Applications to Improve Competitiveness in Industry 4.0 -- Implementation of an Intelligent Model Based on Convolutional Neural Network for the Detection of Diseases in Citrus Crops Caused by Bird Pests Using an Intelligent Drone -- 1 Introduction -- 2 Project Development -- 2.1 Object Classifier and Object Detector -- 2.2 Artificial Neural Network -- 2.3 Convolutional Neural Network -- 2.4 Comparison Between an Artificial Neural Network and a CNN -- 2.5 Pixels and Neurons -- 2.6 Choice of the Crop to Be Analyzed -- 2.7 Process to Be Automated -- 3 Materials and Methods -- 3.1 Acquisition of the Images -- 3.2 Development of the Application -- 4 Results -- 5 Experimentation -- 6 Conclusions and Future Research -- References -- Intelligent Application to Detection of Arachnid Bites in Children Implementing Deep Learning Techniques, an Aml-Based Solution -- 1 Introduction -- 2 Implementation of the Intelligent Application -- 3 Spider Bite Recognition -- 3.1 Diagnosis, Prognosis and Follow-up -- 3.2 Treatment -- 3.3 Prevention -- 3.4 Methodological Proposal for the Recognition of an Arachnid Bite -- 4 Test Development -- 4.1 Module for the Recognition of Arachnids and their Bites -- 4.2 Results -- 5 Conclusions and Future Work -- References -- Evacuation Route Optimization in the Plaza de la Mexicanidad, Using Humanitarian Logistics -- 1 Introduction -- 2 Behavior of the Masses -- 2.1 Stampedes of the Masses -- 2.2 Pre-disaster Planning -- 2.3

Implementation of a Mass Victim Assistance System -- 3 Simulation Models -- 3.1 State of the Art -- 3.2 Mathematical Model -- 3.3 Simulated Case Studies and Comparison with Reality -- 3.4 Trajectory Simulation -- 4 Voronoi Diagram -- 5 Future Research and Works -- 6 Conclusions and Future Challenges -- References.

Automatic Fall Detection for the Care of Older Adults in Smart Cities -- 1 Introduction -- 2 Theory -- 2.1 Machine Learning -- 2.2 Layers -- 3 Proposed Methodology -- 3.1 Activation Functions -- 3.2 Training Parameters of a Neural Network -- 3.3 Tools Used for the Development of ANN Architectures -- 3.4 Video Processing -- 3.5 Action Recognition Through Video Sequences -- 4 Methods -- 4.1 Fall and Non-fall Labelling -- 4.2 Pre-processing -- 4.3 Architecture -- 4.4 Evaluation Metrics -- 5 Results -- 5.1 Training Results -- 5.2 Test Set Evaluation -- 6 Conclusions -- References -- Automatic Tumor Segmentation in Mammogram Images for Healthcare Systems in Smart Cities -- 1 Introduction -- 2 Literature Review -- 3 Theory Background -- 3.1 Deep Learning -- 3.2 Depthwise Layers -- 3.3 Non-local Processing -- 4 Mammogram Database -- 5 Deep Learning Architecture for Breast Tumor Detection -- 5.1 Architecture Design -- 5.2 Training -- 5.3 Implementation -- 6 Validation -- 7 Conclusions -- References -- Impact of Industry 4.0: Improving Hybrid Laser-Arc Welding with Big Data for Subsequent Functionality in Underwater Welding -- 1 Introduction -- 2 Industry 4.0 -- 2.1 The Origins -- 2.2 Industry 4.0 Techniques -- 3 Welding Technologies -- 3.1 Laser Beam Welding (LBW) -- 3.2 Gas Metal Arc Welding (GMAW) -- 3.3 Hybrid Welding -- 4 Optimization -- 4.1 Database -- 4.2 Multilayer Perceptron (MLP) -- 4.3 Sequential Minimal Optimization (SMO) -- 4.4 Other Techniques -- 5 Conclusions and Future Challenges -- References -- Interpersonal Relationships and Reciprocity: Their Influence in Knowledge Transfer Inside of Mexican Hotels -- 1 Introduction -- 2 Literature Review -- 3 Methodology -- 4 Results -- 5 Conclusions -- References -- Modern Technology Applications Including Metaheuristics and Artificial Intelligence Based Applications for Industry 4.0.

Brainwaves Behavior During the Learning Curve Associated with the Manufacturing of a Product with Legos -- 1 Introduction -- 1.1 Theoretical Framework -- 2 Methodology -- 2.1 Standard Time Determination -- 2.2 Participants Involved in the Study -- 2.3 Experiment and Data Processing -- 2.4 Statistical Analysis -- 3 Results -- 4 Discussion -- 5 Conclusions and Future Challenges -- References -- Audio Features Extraction to Develop a Child Activity Recognition Model Using Support Vector Machine to Monitoring Security in a Smart City -- 1 Introduction -- 2 Materials and Methods -- 2.1 Dataset Description -- 2.2 Data Analysis -- 2.3 Model Validation -- 3 Experiments -- 3.1 Audio Recordings -- 3.2 Feature Extraction -- 3.3 Classification Model -- 3.4 Classification Process -- 4 Conclusion and Future Research -- References -- Sentiment Analysis Using Natural Language Processing Through a Speech Recognition System Using a Hybrid Mobile App -- 1 Introduction -- 2 Voice Recognition Algorithm Using Go -- 3 Sentiment Analysis Using a Rating System with Go -- 4 Hybrid Mobile App with Google Flutter Framework -- References -- Logistics of Hospitalization Patients with COVID and Ambulances Required -- 1 Introduction -- 2 Descriptions of the Model Components -- 2.1 The Shortest Route -- 2.2 The Shortest Path Algorithm -- 3 Proposal Methodology -- 3.1 Case-Based Reasoning to Solve Route Problems -- 4 The Proposed Model of Our Hybrid Algorithm -- 5 Experimental Results -- 6 Conclusion and Future Research -- References -- A Heuristic Method for Oil Distribution

Networks Applied to the Switching Behavior in the Oil Industry -- 1  
Introduction -- 2 Literature Review -- 3 Methodology -- 4 Results --  
References -- Metaheuristics for Order Picking Optimisation:  
A Comparison Among Three Swarm-Intelligence Algorithms -- 1  
Introduction -- 2 Literature Review.  
2.1 Order Picking -- 2.2 Ant Colony Optimisation -- 2.3 Elephant  
Herding Optimisation -- 2.4 Bat Algorithm -- 3 Data Description -- 4  
Computational Tests -- 5 Conclusions and Further Research --  
References -- Implementation of an Intelligent Framework  
for the Analysis of Body Movements Through an Avatar Adapted  
to the Context of Industry 4.0 for the Recruitment of Personnel -- 1  
Introduction -- 2 Theory -- 3 Equipment -- 3.1 Display -- 3.2 Virtual  
Reality Simulation Lens -- 3.3 The Mid-Range Cpu Intel Core I5-  
10600 K Versus Amd Ryzen 5 3600 -- 3.4 Graphic Card -- 4 Softwares  
-- 4.1 Body Tracking SDK Azure Kinect Integration -- 4.2 Procedure  
of Conducting the SDK Kinect Software -- 4.3 SQL Environment -- 5  
Implemented Intelligent Application -- 5.1 Experiment  
and Implementation -- 5.2 Summary Statistics for Determine Industrial  
Process to Model -- 6 Conclusions -- References -- Industry 4.0  
Optimization and Its Future Effects on Z Generation Focused  
on the Paradigm Shift of an Innovation Ecosystem -- Selection  
of Factors Influencing for Reliable Electrical Power Transmission Design  
in Industry 4.0 -- 1 Introduction -- 1.1 Thermal Behavior of the Power  
Cable -- 2 Underground Cable System in Industry 4.0 -- 3 Design  
of Experiments -- 4 Experimentation and Results -- 5 Conclusion --  
References -- Analysis of Transport Logistics Operations at a Link  
in a Reverse Supply Chain that Values Used Cooking Oil -- 1  
Introduction -- 2 Reverse Supply Chains and Logistics Transport  
Operations -- 3 Analysis of Transport Logistics Operations of Used  
Cooking Oil -- 3.1 The Mode of Transport Definition and Operation --  
3.2 Management of the Vehicle Capacity -- 3.3 Transport Risk Analysis  
-- 4 Results -- 5 Conclusions -- References -- The Transformation  
of Supply Chains in the Circular Economy from International  
Experiences to the Mexican Cases -- 1 Introduction.  
2 Circular Economy and Supply Chains -- 3 Methodology -- 3.1  
Literature Review -- 3.2 Economic Units (EU) Exploration by Kind  
of Material -- 4 Analysis of Descriptive Statistics -- 5 Challenges  
and Opportunities -- 6 Companies by Material, Link and Entity -- 7  
Conclusions -- References -- Nanostores' Density and Geographical  
Location: An Empirical Study Under Urban Logistics Approach -- 1  
Introduction -- 2 Empirical Study Design -- 3 Results Analysis -- 4  
Findings, Limitations and Future Work -- 5 Conclusions -- References  
-- Blockchain Model Implementation to Select the Best Bid  
in an Industrial Supply Chain -- 1 Introduction -- 2 Related Works -- 3  
Proposed Model -- 3.1 Content Modeling -- 4 Results -- 5 Conclusions  
-- 6 Future Works -- References -- Sociodemographic Analysis  
of the Location of MSW Collection Centers in Mexico City -- 1  
Introduction -- 2 Theoretical Framework -- 3 Materials and Methods  
-- 4 Results and Discussion -- 5 Conclusions -- References --  
Classification System to Detect Diseases in Apples by Using  
a Convolutional Neural Network -- 1 Introduction -- 2 The Problem --  
3 The Solution -- 4 Conclusions and Future Research -- References.

---