1. Record Nr. UNISA996464495703316 Technological innovation for applied AI systems: 12th IFIP WG 5.5 **Titolo** /SOCOLNET Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021, Costa de Caparica, Portugal, July 7-9, 2021: proceedings / / Luis M. Camarinha-Matos, Pedro Ferreira, Guilherme Brito (editors) Pubbl/distr/stampa Cham, Switzerland:,: Springer,, [2021] ©2021 **ISBN** 3-030-78288-3 Descrizione fisica 1 online resource (358 pages) IFIP Advances in Information and Communication Technology;; 626 Collana Disciplina 006.22 Soggetti Cooperating objects (Computer systems) Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Nota di contenuto Intro -- Preface -- Reference -- Organization -- Contents --

Collaborative Networks -- Al and Simulation for Performance Assessment in Collaborative Business Ecosystems -- 1 Introduction --2 Relationship with Innovation in Artificial Intelligence Systems -- 3 The Simulation Model -- 3.1 Characterisation of the Data -- 3.2 Performance Assessment and Influence Mechanism -- 3.3 Model of the Agents -- 3.4 Simulation Results -- 4 Conclusions and Further Work -- References -- The Benefits of Applying Social Network Analysis to Identify Collaborative Risks -- 1 Introduction -- 2 Literature Review -- 2.1 Collaborative Risks -- 2.2 Social Network Analysis (SNA) -- 2.3 Organizational Business Intelligence Architecture (BI) -- 3 Model Development and Application -- 4 Application Case of the Proposed Model -- 5 Conclusions and Further Research -- References --A Mixed Method for Assessing the Reliability of Shared Knowledge in Mass Collaborative Learning Community -- 1 Introduction -- 2 Relationship to Technological Innovation for Applied Artificial Intelligence Systems -- 3 Related Work -- 4 Proposed Mixed Method for Assessing the Reliability of Shared Knowledge or Information (MAM-MCL) -- 5 Discussion -- 6 Conclusion -- References -- Smart Manufacturing -- Characteristics of Adaptable Control of Production

Systems and the Role of Self-organization Towards Smart
Manufacturing -- 1 Introduction -- 2 Relation to Applied Artificial
Intelligence Systems -- 3 Smart Manufacturing and Cyber-Physical
Production Systems -- 3.1 Self-organization in Smart Manufacturing -4 Characteristics of Adaptable Production Systems Towards Smart
Manufacturing -- 4.1 Characteristics Description -- 4.2 Self-adapting
and Self-organizing Manufacturing Applications -- 4.3 The Role
of Self-organization Towards Smart Manufacturing -- 5 Conclusions

and Further Work -- References. Predictive Manufacturing: Enabling Technologies, Frameworks and Applications -- 1 Introduction -- 2 Relation to Applied Artificial Intelligence Systems -- 3 Adopted Methodology -- 4 Results and Discussions -- 5 Conclusion -- References -- Control of Manufacturing Systems by HMS/EPS Paradigms Orchestrating I4.0 Components Based on Capabilities -- 1 Introduction -- 2 Relationship to Applied Artificial Intelligence Systems -- 3 Literature Review -- 3.1 Architectures to Orchestrate "Capabilities" -- 3.2 Ontology and Modeling's Approaches for Virtual Representation Using "Component I4.0" -- 4 Work Purpose -- 5 Results -- 6 Conclusion and Future Work -- References -- A Framework for Self-configuration in Manufacturing Production Systems -- 1 Introduction -- 2 Literature Review -- 2.1 Artificial Intelligence for Smart Production Systems -- 2.2 Self-concept in Manufacturing -- 2.3 Enabling Technologies for Selfconfiguration -- 3 Framework for Self-configuration in Production Systems -- 3.1 Sequence of Proposed Self-configuration Strategy -- 4 Implementation and Deployment to an Industrial Use-Case -- 5 Conclusion and Future Work -- References -- Cyber-Physical Systems and Digital Twins -- Verification of the Boundedness Property in a Petri Net-Based Specification of the Control Part of Cyber-Physical Systems -- 1 Introduction and Problem Formulation -- 2 Petri Nets in Applied Artificial Intelligence Systems -- 3 Definitions and Notations -- 4 The Idea of the Proposed Method -- 5 Experiments -- 6 Conclusions --References -- Collaborative Cyber-Physical Systems Design Approach: Smart Home Use Case -- 1 Introduction -- 2 Contribution to Applied AI Systems -- 3 Research Approach -- 4 Smart Home Scenario -- 5 Conclusions -- References -- Digital Twin for Supply Chain Master Planning in Zero-Defect Manufacturing -- 1 Introduction. 2 Contribution to Applied Artificial Intelligence Systems -- 3 Literature Review -- 4 Proposal -- 5 Conclusions -- References -- Intelligent Decision Making -- Matheuristic Algorithms for Production Planning in Manufacturing Enterprises -- 1 Introduction -- 2 Matheuristics for Applied Artificial Intelligence Systems -- 3 Literature Review -- 4 Research Contribution and Innovation -- 5 Conclusions and Further Work -- References -- Assessment of Sentinel-2 Spectral Features to Estimate Forest Height with the New GEDI Data -- 1 Introduction --2 Relationship with Applied Artificial Intelligence Systems -- 3 Materials and Methods -- 3.1 Study Areas -- 3.2 Remote Sensing Data -- 3.3 Methods -- 4 Discussion and Results -- 5 Conclusions and Future Work -- References -- Assessing Normalization Techniques for TOPSIS Method -- 1 Introduction -- 2 Contribution to Applied Artificial Intelligence Systems -- 3 Assessment Framework for Evaluation of Normalization Techniques -- 4 Comparison of Normalization Techniques with an Illustrative Example for TOPSIS Method -- 5 Conclusions -- References -- How Can e-Grocers Use Artificial Intelligence Based on Technology Innovation to Improve Supply Chain Management? -- 1 Introduction -- 2 Contribution to Applied Artificial Intelligence Systems -- 3 A Systematic Literature Review -- 3.1 Material Collection -- 3.2 Descriptive Analysis -- 3.3 Category Selection -- 3.4

Material Evaluation -- 4 Research Contribution and Innovation -- 5 Conclusions and Future Work -- References -- A Conceptual Framework of Human-System Interaction Under Uncertainty-Based on Shadow System Perspective -- 1 Introduction -- 2 Relation to Applying AI -- 3 Literature Review -- 4 Shadow System Under Uncertainty -- 5 Human-System Interaction Obstacle -- 6 Human-System Interaction Obstacle -- 7 Conclusion and Research Challenge -- 8 Future Work.

References -- A New Challenge for Machine Ethics Regarding Decision-Making in Manufacturing Systems -- 1 Introduction -- 2 Relationship to Technological Innovation for Applied Al Systems -- 3 Autonomy Role in Ethical Decision Making -- 4 What is Machine Ethics? -- 4.1 Why Machine Ethic is Important? -- 4.2 Challenges in Front of Machine Ethics -- 5 Can Machines Be Responsible? -- 5.1 Types of Human Ethical Responsibility. Can be Extended to Machines? -- 6 Research Approach -- 6.1 Sliding Decision Making Model -- 6.2 Methodology --7 Conclusion -- References -- Smart Energy Management -- Towards a Hybrid Model for the Diffusion of Innovation in Energy Communities -- 1 Introduction -- 2 Relationship with Applied Artificial Intelligence -- 3 Related Literature -- 4 Analysis of Base Models -- 4.1 Diffusion of Innovation Model (DIM) -- 4.2 The Transtheoretical Model (TTM) --4.3 Structural Comparison Between DIT and TTM -- 4.4 Contextual Comparison, Hybridization, and Redefinition -- 4.5 The Hybrid Transtheoretical and Diffusion of Innovation Model (HyTraIn) -- 5 Demonstration of the Modelling Technique -- 6 Application of Concepts to Energy Communities -- 7 Conclusion and Future Work -- References -- Towards Extension of Data Centre Modelling Toolbox with Parameters Estimation -- 1 Introduction -- 2 Related Works -- 3 Parameters Estimation -- 3.1 Regression-Based Estimation -- 3.2 Simulation-Based Optimisation -- 4 Results and Discussion -- 5 Conclusion -- References -- Power Transformer Design Resorting to Metaheuristics Techniques -- 1 Introduction -- 2 Relationship to Applied Artificial Intelligence Systems -- 3 Power Transformer Design Model -- 3.1 GA Operator's Characterization -- 3.2 Mutation with Genetic Compensation Effect -- 3.3 GA Parameters Definition -- 4 Case Study Analysis -- 5 Conclusions -- References --Communications and Electronics.

Detection of Signaling Vulnerabilities in Session Initiation Protocol -- 1 Introduction -- 1.1 Research Question and Contribution -- 1.2 Related Work -- 2 Applied Artificial Intelligence Systems -- 3 Modeling, Learning, and Classification -- 3.1 System Model -- 3.2 Deep Learning and Classification -- 3.3 Unknown SIP Dialogs' Detection -- 4 Performance Evaluation -- 5 Conclusions -- References -- Interference Power Characterization in Directional Networks and Full-Duplex Systems -- 1 Introduction -- 1.1 Motivation and Research Question --2 Relationship to Applied Artificial Intelligence Systems -- 3 System Model -- 4 Performance Analysis -- 5 Conclusions -- References --FEM-Parameterized Sensorless Vector Control of PMSM Using High-Frequency Voltage Injection -- 1 Introduction -- 2 Analysis of PMSM --2.1 Finite Element Method Analysis -- 2.2 Finite Element Method Analysis -- 2.3 Mathematical Model of PMSM -- 3 High-Frequency Synchronous Injection -- 3.1 Mathematical Model -- 3.2 Mathematical Model -- 4 Drive Simulation -- 5 Conclusion -- References --Classification Systems -- Deep Learning-Based Automated Detection of Inappropriate Face Image Attributes for ID Documents -- 1 Introduction -- 2 Contribution to Applied Artificial Intelligence Systems -- 3 Quality Analysis Pipeline -- 4 DL-Based Quality Analysis -- 4.1 Mouth-Open/Eyes-Closed Classification -- 4.2 Veil-Over-Face

Classification -- 5 Experiments and Validation -- 5.1 Data Pipeline -- 5.2 Training Results -- 5.3 Model Testing and Evaluation Experiments -- 5.4 Pipeline Assessment -- 6 Conclusions -- References -- Automatic Cognitive Workload Classification Using Biosignals for Distance Learning Applications -- 1 Introduction -- 2 Relationship to Applied Artificial Intelligence Systems -- 3 Literature Review -- 4 Materials and Methods -- 4.1 Experimental Setup -- 4.2 Data Recording.

4.3 Signals Preprocessing and Features Extraction.