1. Record Nr. UNINA9910746282603321

Autore	Kovalev Sergey
Titolo	Proceedings of the Seventh International Scientific Conference Intelligent Information Technologies for Industry (IITI'23) : Volume 1
Pubbl/distr/stampa	Cham : , : Springer, , 2023 ©2023
ISBN	3-031-43789-6
Edizione	[1st ed.]
Descrizione fisica	1 online resource (444 pages)
Collana	Lecture Notes in Networks and Systems Series ; ; v.776
Altri autori (Persone)	KotenkoIgor SukhanovAndrey
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Invited Papers -- Intelligent Interfaces and Systems for Human-Computer Interaction -- 1 Introduction -- 2 Intelligent Synthesis -- 2.1 Video Modality -- 2.2 Audio Modality -- 2.3 Text Modality -- 2.4 Multimodality -- 3 Intelligent Analysis -- 3.1 Video Modality -- 3.2 Audio Modality -- 3.3 Text Modality -- 3.4 Multimodality -- 4 Conclusions -- References -- Three Knowledge Sources and Three Constituents of Artificial Intelligence Foundation -- 1 Introduction -- 2 Data vs. Knowledge -- 3 Data Science -- 4 From Knowledge Engineering to Knowledge Science: A Perspective -- 5 Digital Twin As a Source of Various Knowledge -- 6 Discussion: Integration and Interaction of Knowledge from Different Types of Sources -- 7 Conclusion -- References -- Machine Learning and Its Applications -- Comparative Analysis of Data Synthesis Methods for Prognostic Models Development in Cardiology -- 1 Introduction -- 2 Related works -- 3 Methods and materials -- 4 Results -- 5 Discussion -- 6 Conclusion -- References -- Artificial Intelligence Approach to Palladium Nanocatalysts Diagnostics Automation -- 1 Introduction -- 2 Model-Based Training DRL Agents -- 3 Optimal Control Algorithms and Spectral Profile Analysis -- 4 Conclusion -- References -- Methodology for Detecting and Feature Selection of an Information Attack in the Process of Mediatization -- 1 Introduction -- 2 Related Work -- 3 Methodology for Detection and Feature Selection

-- 3.1 Information Attack Model -- 3.2 Approach to Detection and Feature Selection -- 4 Case Study -- 5 Conclusion -- References -- Planning Maneuvers for Autonomous Driving Based on Offline Reinforcement Learning: Comparative Study -- 1 Introduction -- 2 Related Work -- 3 Background -- 3.1 Offline RL -- 3.2 Conservative Q-learning -- 4 Approach -- 4.1 CommonRoad Scenarios.
4.2 Trajectories Generation -- 5 Experiments -- 6 Conclusion -- References -- Big Five: What User Posts Say? -- 1 Introduction -- 1.1 Prerequisites for Research -- 1.2 Big Five -- 1.3 Related Work -- 2 Problem Statement -- 3 Methods -- 3.1 Description Dataset -- 3.2 Data Preprocessing -- 3.3 Used Models -- 3.4 Methodology for Evaluating the Results of Experiments -- 3.5 Results -- 4 Discussion -- 5 Conclusion -- References -- Gated Recurrent Unit Autoencoder for Fault Detection in Penicillin Fermentation Process -- 1 Introduction -- 2 Literature Review -- 3 Domain Adaptation -- 4 Deep Learning Models -- 4.1 Gated Recurrent Unit -- 4.2 GRU Based Autoencoder -- 4.3 GRU-AE Based Fault Detection -- 5 Experiments and Results -- 5.1 Dataset -- 5.2 Data Preprocessing -- 5.3 Model Training -- 5.4 Results -- 6 Conclusion -- References -- Resume Recommendation using RNN Classification and Cosine Similarity -- 1 Introduction -- 2 Related Works -- 2.1 Resume Classifier Related Works -- 2.2 Resume Recommender Related Works -- 3 The Proposed Two-Fold Algorithm Approach -- 3.1 Resume Classification -- 3.2 Experimental Results and Evaluation -- 4 Resume Recommendation -- 4.1 Similarity Function -- 4.2 Computing Similarity Function -- 5 Discussion and Conclusion -- References -- Machine Learning for Adaptive Analysis and Evaluation of Soil Slopes -- 1 Introduction -- 2 Background -- 3 Method -- 3.1 The Model of Cluster Analysis -- 3.2 BCubed Clustering Quality Metric -- 3.3 Agglomerative Clustering Algorithm -- 4 Results -- 4.1 Pre-processing of the Data Frame -- 4.2 Field Segmentation -- 4.3 Formation of ``Winners'' and ``Losers'' -- 4.4 Clustering -- 4.5 Angle Calculation -- 4.6 Quality Assessment -- 5 Proposed Decision -- 6 Conclusion and Future Work -- References.
Research on Video Pedestrian Tracking Based on the Combination of Optical Flow Method and Target Tracking Network -- 1 Introduction -- 1.1 Tracking Model Based on Traditional Methods -- 1.2 Tracking Model Based on Deep Learning Methods -- 2 Related Work -- 2.1 Siamese-Based Tracking Model -- 2.2 Self-attention -- 2.3 Variational Optical Flow Method -- 3 Transformer-Based Target Tracking Model -- 3.1 Overall Framework of SiamSA Tracking Model -- 3.2 Variational Optical Flow Model Based on Deep Learning Priors -- 3.3 Optical Flow Vector Correction Search Area -- 4 Experiments -- 4.1 Effect of Self-attention -- 4.2 Improved Optical Flow Model -- 4.3 Effect of Search Area Update Model -- 5 Conclusion -- References -- Development and Testing Intelligent Video Surveillance Systems Based on the CNN Algorithm -- 1 Introduction -- 2 Analog Overview -- 2.1 Solutions Based on OpenCV Methods -- 2.2 Convolutional Neural Network Models -- 2.3 Determining the Accuracy of Forecast Data -- 3 Suggested Solutions -- 3.1 Object Detection Based on OpenCV and Convolution Neural Network -- 3.2 Tracking and Dynamic Identity Stack Creation Algorithm -- 4 Computer Simulation Scenarios as Datasets -- 5 Experimental Results -- 5.1 Testing the Object Detection Algorithm -- 5.2 Testing the Tracking Algorithm -- 6 Conclusion -- References -- Impact of Loss Functions on the Training of LiDAR-based Place Recognition Models -- 1 Introduction -- 2 Related Work -- 2.1 LiDAR-based Place Recognition Methods -- 2.2 Loss Functions in Place Recognition -- 3 Methodology -- 3.1 Loss Function -- 3.2 Methods -- 3.3 Training Details -- 4 Experiments --

4.1 Datasets -- 4.2 Evaluation Metrics -- 4.3 Results and Discussion -- 5 Conclusion -- References -- Neural Attention Forests: Transformer-Based Forest Improvement -- 1 Introduction -- 2 Preliminaries. 2.1 Nadaraya-Watson Regression and Attention -- 2.2 Attention-based Random Forest -- 3 The Neural Attention Forest Architecture -- 4 The Neural Attention Forest as a Transformer -- 5 Numerical Experiments -- 6 Concluding Remarks -- References -- Audio-Visual Multi-modal Meeting Recording System -- 1 Introduction -- 1.1 Background -- 1.2 Main Contribution -- 1.3 Paper Structure -- 2 Training Strategy -- 2.1 Contrast Learning -- 2.2 Domain Generalization -- 3 Dataset -- 3.1 Dataset of AVSR -- 3.2 Dataset of SPR -- 4 Models -- 4.1 AVSR Model -- 4.2 SPR Model -- 5 Experiment -- 5.1 AVSR Model Training -- 5.2 SPR Model Training -- 5.3 Test -- 6 System Deployment -- 6.1 User Interface -- 6.2 Function Realization -- 7 Conclusion -- References -- Evolutional Modeling -- Studying the Efficiency of Parameter Scaling in Optimal Control Problems with Parallel Memetic Algorithm -- 1 Introduction -- 2 Problem Formulation -- 3 Gasoline's Catalytic Reforming Reaction -- 4 Memetic Parallel Mind Evolutionary Computation Algorithm -- 5 Computational Experiments -- 5.1 Study of the Parameter Scaling Efficiency -- 5.2 Analysis from the Chemical Perspective -- 5.3 Analysis from the Optimization Perspective -- 6 Conclusions -- References -- Canonical Representation of Transport Networks and Their Identification Based on Evolutionary Modeling -- 1 Introduction -- 2 Operations on Basic Structures of Transport Networks -- 2.1 Serial Connection -- 2.2 Adding a Feedback Loop -- 2.3 Parallel Connection -- 3 Model Parameter Identification Method -- 4 Learning Theory Methods in Transport Network Identification -- 5 Conclusion -- References -- Modified Adaptive Particle Swarm Algorithm -- 1 Introduction -- 2 Approach to the Representation of Solutions in an Algorithm based on Swarm Intelligence -- 3 Modified Algorithm for the Adaptive Behavior of a Bee Colony.
4 Hybridization of the Structure of Swarm Intelligence -- 5 Experimental Studies -- 6 Conclusion -- References -- Development and Research of Algorithms for the Synthesis of Combinational Logic Circuits Based on the Evolutionary Approach -- 1 Introduction -- 2 Problem Statement -- 3 Evolutionary Algorithm for Synthesizing Combinational Circuits -- 4 Results of Computational Experiments -- 5 Conclusions -- References -- Fuzzy Models -- Co-active of Fuzzy Temporal Ontological Models and Fuzzy Temporal Cognitive Models for the Analysis and Forecasting of Complicated Systems -- 1 Introduction -- 2 Fuzzy Temporal Ontological Model -- 3 Fuzzy Relational Temporal Cognitive Model -- 4 Forecast Assessment of the Condition and Risks of the IEMS Malfunction -- 5 Conclusion -- References -- Synthesis of Intelligent Tracking Filter with Fuzzy for Parameter Setting in Problems of Air Traffic Management Automation -- 1 Introduction -- 2 Formulation of the Problem -- 3 Construction of the Equation of the Target Motion Based on the Condition for the Maximum of the Generalized Power Function for a Discrete Time Setting -- 4 The Synthesis of the Intelligent Tracking Filter -- 5 Mathematical Simulation -- 6 Conclusion -- References -- Intelligent Decision-Making -- Making Diagnostic Decisions Based on the Assessment of Mixed Production Rules -- 1 Introduction -- 2 Development of Mixed Production Rules -- 3 Application of a Complex Approach to MPR for Diagnosing the Asynchronous Electric Motor -- 4 Conclusion -- References -- Ontology-Based Methodology for Knowledge Maps Design -- 1 Introduction -- 2 Knowledge Maps: Short Overview -- 3 Ontologies as a Conceptual Skeleton of a Knowledge Domain -- 4 Four Meta-steps

to Create a Knowledge Map -- 5 Conclusion -- References -- Operating with Fuzzy Cases in Distributed Intelligent Systems -- 1 Introduction.
2 Searching for a Decision Based on Cases.