1. Record Nr. UNINA9910619279303321

Titolo	Intelligence Science IV : 5th IFIP TC 12 International Conference, ICIS 2022, Xi'an, China, October 28–31, 2022, Proceedings / / edited by Zhongzhi Shi, Yaochu Jin, Xiangrong Zhang
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	3-031-14903-3
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (480 pages)
Collana	IFIP Advances in Information and Communication Technology, , 1868-422X ; ; 659
Disciplina	929.605 006.3
Soggetti	Artificial intelligence Computer vision Application software Pattern recognition systems Education - Data processing Artificial Intelligence Computer Vision Computer and Information Systems Applications Automated Pattern Recognition Computers and Education
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Abstracts of Keynote and Invited Talks -- Tactile Situations: A Basis for Manual Intelligence and Learning -- Brain-like Perception and Cognition: Challenges and Thinking -- Dealing with Concept Drifts in Data Streams -- A Novel Bionic Imaging and Its Intelligent Processing -- Skill Learning in Dynamic Scene for Robot Operations -- Emerging Artificial Intelligence Technologies in Healthcare -- Memory Cognition -- Contents -- Brain Cognition -- Mouse-Brain Topology Improved Evolutionary Neural Network for Efficient Reinforcement Learning -- 1 Introduction -- 2 Related Works -- 3 Methods -- 3.1 The Allen Mouse Brain Atlas -- 3.2 The Clustered

Hierarchical Circuits -- 3.3 The Neuron Model -- 3.4 Coping the Biological Circuits to Artificial Ones -- 3.5 The Network Learning -- 4 Experiments -- 4.1 The Clustered Brain Regions -- 4.2 The Network Topology from Biological Mouse Brain -- 4.3 Results with Circuit-46 and Random Networks -- 4.4 Result Comparison with Different Algorithms -- 5 Discussion -- References -- DNM-SNN: Spiking Neural Network Based on Dual Network Model -- 1 Introduction -- 2 Methods -- 2.1 Traditional SNN Supervised Learning Algorithm Framework and Its Limitations -- 2.2 Proposed Dual-Model Spike Network Supervised Learning Algorithm -- 2.3 Proposed Multi-channel Mix Module Prediction Method -- 2.4 The Chosen Network Model -- 2.5 Selection of Spiking Neurons -- 3 Experimental Results -- 3.1 Single- and Dual-Model Resnet11 Performance on the CIFAR-10 Dataset -- 3.2 Related Work Comparison -- 4 Conclusion -- References -- A Memetic Algorithm Based on Adaptive Simulated Annealing for Community Detection -- 1 Introduction -- 2 Background -- 2.1 Modularity -- 2.2 Normalized Mutual Information -- 3 Description of MA-ASA -- 3.1 Segmented Label Propagation -- 3.2 Selection and Crossover Operation.
3.3 Mutation Operation -- 3.4 Improved Simulated Annealing -- 3.5 Framework of MA-ASA -- 4 Experiments and Analysis -- 4.1 Experimental Settings -- 4.2 Experimental Results and Analysis -- 5 Conclusion -- References -- The Model of an Explanation of Self and Self-awareness Based on Need Evolution -- 1 Background and Significance -- 2 The Nature and Needs of Life -- 2.1 The Nature and Representation of the Self -- 2.2 The Primary Needs and Principle of Life -- 3 Evolution and Representation of the Needs of Life -- 3.1 Needs Representation and Original Self-evolution in Single-Celled and Complex Organisms -- 3.2 Representation Needs and Self-awareness of Human -- 4 Self-model Based on the Evolution of Needs -- 4.1 Iterative Model of Needs Evolution -- 4.2 Evolutionary Model of the Self -- 5 Dicussion and Conclusion -- References -- Spiking Neuron Network Based on VTEAM Memristor and MOSFET-LIF Neuron -- 1 Introduction -- 2 Proposed Method -- 2.1 Leaky Integrate-and-Fire Model -- 2.2 Design of LIF Circuit -- 2.3 Correspondence Between Network and Circuit -- 2.4 Processing of the DVS128 Gesture Dataset -- 2.5 Network Formulation -- 3 Performance Analysis and Discussion -- 4 Conclusion -- References -- Machine Learning -- A Deception Jamming Discrimination Method Based on Semi-supervised Learning with Generative Adversarial Networks -- 1 Introduction -- 2 Signal Model -- 2.1 The Construction of a Multistatic Radar System Model -- 2.2 Generation of Echo Data -- 3 The Discrimination Network Based on SGAN -- 4 Simulation -- 4.1 Simulation Analysis -- 4.2 Simulation Results with Different PRI -- 4.3 The Comparison of Different Discrimination Methods -- 5 Conclusion -- References -- Fast Node Selection of Networked Radar Based on Transfer Reinforcement Learning -- 1 Introduction -- 2 Related Work -- 2.1 Radar Node Selection -- 2.2 Reinforcement Learning.
2.3 Transfer Learning -- 3 Methodology -- 3.1 Revisiting of Monte Carlo Tree -- 3.2 The Lower Bound of Cramero (CLRB) -- 3.3 Selection Flow -- 3.4 Variable-Number Node Search -- 3.5 Transfer Reinforcement Learning -- 4 Experiments and Analysis -- 5 Conclusion -- References -- Weakly Supervised Liver Tumor Segmentation Based on Anchor Box and Adversarial Complementary Learning -- 1 Introduction -- 2 Approach -- 2.1 Anchor Boxes Generation -- 2.2 Adversarial Complementary Learning -- 2.3 Application -- 2.4 Pseudo Mask Generation -- 3 Experiments -- 3.1 Datasets and Evaluated Metric -- 3.2 Classification Network and Hyperparameter Settings --

3.3 Segmentation Network and Test Results -- 4 Conclusions -- References -- Weakly Supervised Whole Cardiac Segmentation via Attentional CNN -- 1 Introduction -- 2 Method -- 2.1 Pseudo Masks -- 2.2 Deep U-Net Network -- 2.3 Improved Weighted Cross-Entropy Loss -- 3 Experimental and Results -- 3.1 Datasets and Implementation Details -- 3.2 Patch Selection -- 3.3 Experimental Results -- 3.4 Ablation Experiments -- 3.5 Generality Experiments -- 4 Conclusion -- References -- Noisy Label Learning in Deep Learning -- 1 Introduction -- 2 Preliminary Knowledge -- 2.1 Noisy Labels in Deep Learning -- 2.2 Noisy Label Dataset and Noisy Label Types -- 2.3 Analysis the Problems in Noisy Label Learning -- 3 Existing Methods of Noisy Label Learning -- 3.1 Full-Equal-Using Method -- 3.2 Clean-Based Method -- 3.3 Full-Differ-Using Method -- 4 Problems in Existing Methods -- 4.1 Difference Between Synthetic Dataset and the Actual Dataset -- 4.2 Problems with Existing Methods -- 4.3 Possible Solutions -- 5 Conclusion -- References -- Accelerating Deep Convolutional Neural Network Inference Based on OpenCL -- 1 Introduction -- 2 Related Work -- 3 Design, Implementation and Optimization of CNN on OpenCL.
3.1 Parallel Strategy for Convolution Layer -- 3.2 Parallel Strategy for Other Layers -- 3.3 Kernel Fusion and Increasing Global Task -- 4 Experiment and Evaluations -- 4.1 Experimental Environment -- 4.2 Performance Comparison of Depthwise Convolution Operations -- 4.3 Comparison of Parallel DCNN Inference Performance -- 4.4 Performance Comparison of Different Hardware Environments -- 5 Conclusions -- References -- A Simple Approach to the Multiple Source Identification of Information Diffusion -- 1 Introduction -- 2 Related Works and Motivations -- 2.1 Related Methods -- 2.2 Motivations -- 3 Preliminaries and Problem Formulation -- 3.1 Susceptible-Infected (SI) Model -- 3.2 Problem Formulation -- 4 KST Method -- 4.1 Analysis -- 4.2 KST Method -- 5 KST-Improved Method -- 6 Evaluation -- 6.1 Experiments Settings -- 6.2 Accuracy of Identifying Sources -- 7 Conclusion -- References -- Data Intelligence -- A Directed Search Many Objective Optimization Algorithm Embodied with Kernel Clustering Strategy -- 1 Introduction -- 2 The Proposed Method -- 2.1 Directed Search Sampling and Guiding Solutions -- 2.2 Environmental Selection -- 3 Experimental Results and Analysis -- 4 Conclusion -- References -- A Two-Branch Neural Network Based on Superpixel Segmentation and Auxiliary Samples -- 1 Introduction -- 2 Proposed Method -- 2.1 Selection of Auxiliary Samples -- 2.2 The Structure of TBN-SPAS -- 3 Implementation Process of TBN-MERS -- 4 Experiment and Analysis -- 4.1 Experimental Settings -- 4.2 The Role of Auxiliary Branch -- 4.3 Comparison with Existing Methods -- 5 Conclusions -- References -- Augmentation Based Synthetic Sampling and Ensemble Techniques for Imbalanced Data Classification -- 1 Introduction -- 2 Augmentation Based Synthetic Sampling Method -- 2.1 Data Augmentation (DA) -- 2.2 Notations -- 2.3 Proposed Method.
3 Experiment Settings and Result Analysis -- 3.1 Datasets -- 3.2 Evaluation Metric -- 3.3 Experimental Results -- 4 Integration of Augmentation Based Synthetic Sampling Method and Ensemble Techniques -- 5 Conclusion -- References -- Language Cognition -- BA-GAN: Bidirectional Attention Generation Adversarial Network for Text-to-Image Synthesis -- 1 Introduction -- 2 Related Work -- 3 Our Model -- 3.1 Text Encoder and Image Encoder -- 3.2 Multi-stage Generative Adversarial Networks -- 4 Experiments -- 5 Conclusion -- References -- Personalized Recommendation Using Extreme Individual Guided and Adaptive Strategies -- 1 Introduction -- 2 Background -- 2.1 Definition of Recommendation Problem -- 2.2 Multi-objective

Optimization Problem -- 2.3 Probs -- 3 Proposed Algorithm -- 3.1 Framework of MOEA-EIMA -- 3.2 Individual Encoding and Initialization -- 3.3 The Two Objectives -- 3.4 Genetic Operators -- 4 Experiments and Analysis -- 4.1 Experiment Settings -- 4.2 Experimental Results -- 5 Conclusions -- References -- Improved Transformer-Based Implicit Latent GAN with Multi-headed Self-attention for Unconditional Text Generation -- 1 Introduction -- 1.1 Generative Adversarial Network (GAN) for Unconditional Text Generation -- 1.2 Research Objective and Content -- 2 Related Works -- 3 Model Architecture -- 3.1 Overall Framework -- 3.2 Multi-headed Self Attention Based Generator -- 3.3 Training Details -- 4 Experiments -- 4.1 Evaluation Metrics -- 4.2 Microsoft COCO: Common Objects in Context -- 4.3 Ablation Experiment -- 5 Conclusion and Future Work -- References -- Learning a Typhoon Bayesian Network Structure from Natural Language Reports -- 1 Introduction -- 2 Related Works -- 3 The Framework of Learning Typhoon Bayesian Network Structures -- 3.1 State Extraction Model -- 3.2 Standardize State Information -- 3.3 Causal Relationship Extraction.
3.4 Generate Typhoon Bayesian Network.

Sommario/riassunto

This book constitutes the refereed proceedings of the 5th International Conference on Intelligence Science, ICIS 2022, held in Xi'an, China, in August 2022. The 41 full and 5 short papers presented in this book were carefully reviewed and selected from 85 submissions. They were organized in topical sections as follows: Brain cognition; machine learning; data intelligence; language cognition; remote sensing images; perceptual intelligence; wireless sensor; and medical artificial intelligence.