

1. Record Nr.	UNINA9910720082903321
Titolo	3D imaging--multidimensional signal processing and deep learning . Volume 2. : multidimensional signals, video processing and applications // edited by Srikanta Patnaik [and three others]
Pubbl/distr/stampa	Singapore : , : Springer, , [2023] ©2023
ISBN	981-9911-45-1
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (283 pages)
Collana	Smart Innovation, Systems and Technologies, , 2190-3026 ; ; 348
Disciplina	060.68
Soggetti	Deep learning (Machine learning) Signal processing Three-dimensional imaging
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Contents -- About the Editors -- 1 Prediction Based on Sentiment Analysis and Deep Learning -- 1.1 First Section -- 1.2 Benchmark Prediction -- 1.2.1 Capture Data of Stock Comments from www.guba.eastmoney.com [1] -- 1.2.2 Build a Model for False News Judgment -- 1.2.3 Test Stock Comments for False News -- 1.2.4 Build a Sentiment Classification Model for Stock Comment -- 1.2.5 Build an Index from the Analysis Results -- 1.2.6 Capture and Load Data -- 1.2.7 A Subsection Sample -- 1.3 Conclusion -- References -- 2 A Survey on Time Series Forecasting -- 2.1 Introduction -- 2.2 Traditional Machine Learning-Based Method -- 2.2.1 Feature Extraction -- 2.2.2 Feature Selection -- 2.2.3 Model Training -- 2.2.4 Rolling Time Series Forecasting -- 2.3 Deep Learning-Based Method -- 2.3.1 RNN -- 2.3.2 LSTM -- 2.3.3 GRU -- 2.4 Experiment Results -- 2.4.1 Machine Learning Results -- 2.4.2 Deep Learning Results -- 2.5 Conclusion -- References -- 3 Research and Development of Visual Interactive Performance Test Methods and Equipment for Intelligent Cockpit -- 3.1 Introduction -- 3.2 System Overview -- 3.2.1 Visual Bionic Robot -- 3.2.2 Main Case of Bionic Robot -- 3.2.3 Binocular High-Frame Camera -- 3.2.4 Software -- 3.3 Head Visual Tracking -- 3.3.1 Self-Stabilizing Function of the Head -- 3.3.2 High-Precision

Servo Motor -- 3.3.3 Servo Encoder -- 3.3.4 Self-Stabilizing PID Algorithm for the Cradle Head -- 3.3.5 Precision Test of Self-Stabilizing Function of Head -- 3.4 System Effect -- 3.5 Conclusion -- References -- 4 Design and Validation of Automated Inspection System Based on 3D Laser Scanning of Rocket Segments -- 4.1 Introduction -- 4.2 3D Scanning Measurement Principle -- 4.2.1 Three-Dimensional Laser Scanning Equipment -- 4.2.2 Lifting Platform System -- 4.2.3 Checking Standard Device -- 4.2.4 Measurement Software Design. 4.3 Measurement System Accuracy Verification -- 4.3.1 Verification of Length Splicing Accuracy -- 4.3.2 Verification of Geometric Element Detection Accuracy -- 4.4 Conclusion -- 4.5 Discussion -- References -- 5 Research and Implementation of Electric Equipment Connectivity Data Analysis Model Based on Graph Database -- 5.1 Introduction -- 5.2 Related Work -- 5.3 Research on the Method and Algorithm of Electric Data Modeling -- 5.3.1 Electric Data -- 5.3.2 Electric Data Modeling -- 5.4 Implementation of Electric Data Model Based on Graph Database -- 5.4.1 Electric Data Relation Processing -- 5.4.2 Implementation and Construction of Power Data Model -- 5.4.3 Electric Equipment Connectivity Analysis Based on Power Grid Data Model -- 5.5 Application Results -- References -- 6 Improving CXR Self-Supervised Representation by Pretext Task and Cross-Domain Synthetic Data -- 6.1 Introduction -- 6.2 Related Works -- 6.2.1 Overview of CXR Classification -- 6.2.2 Self-Supervision and Contrastive Learning -- 6.2.3 Pretext Task and Data Augmentation -- 6.3 Problem Definition -- 6.3.1 Contrastive Learning Pretext Task -- 6.3.2 Supervised Multi-class Linear Evaluation -- 6.4 Method -- 6.4.1 Selection of Candidate Transformations -- 6.4.2 XR-Augment -- 6.4.3 Pseudo-CXR Generation -- 6.5 Experiment -- 6.5.1 Data -- 6.5.2 Settings -- 6.5.3 Result and Analysis -- 6.6 Conclusion and Future Research -- References -- 7 Research on Dynamic Analysis Technology of Quantitative Control Oriented to Characteristics of Power Grid Digital Application Scenarios -- 7.1 Introduction -- 7.2 Quantitative Control Dynamic Analysis Technique -- 7.3 Dynamic Analysis of Quantitative Control of Power Network -- 7.4 Function Analysis of Power Grid Digitalization Project. 7.5 Research on Influencing Factor Set of Target Feature Quantification in Digital Application Scene Based on Expert Scoring Method -- 7.6 Research on Quantitative Impact Index Set of Digital Application Scene Features Based on Fuzzy Analytic Hierarchy Process -- 7.7 Dynamic Identification Technology of Quantitative Control Based on Bayesian Network -- 7.8 Conclusion -- References -- 8 Research on Detection of Fungus Image Based on Graying -- 8.1 Introduction -- 8.2 Fungus Image Gray Processing -- 8.2.1 Graying of Fungus Pictures -- 8.2.2 Threshold Method -- 8.2.3 Problems with Testing -- 8.3 Realization of Single Chip Microcomputer -- 8.3.1 Selection of Single Chip Microcomputer -- 8.3.2 Total Process of Single Chip Microcomputer -- 8.3.3 Selection of Filter -- 8.3.4 Detection Function Module -- 8.4 Summary -- References -- 9 Secondary Frequency Regulation Control Strategy of Battery Energy Storage with Improved Consensus Algorithm -- 9.1 Introduction -- 9.2 Optimal Control Method of Secondary Frequency -- 9.2.1 Energy Storage Output Control Structure -- 9.2.2 Secondary Frequency Modulation Objective Function of Power Grid -- 9.3 Secondary Frequency Modulation Based on Consistency Algorithm -- 9.3.1 Iterative Calculation Method of Frequency Response Consistency -- 9.3.2 Double-Layer Cooperative Control of Secondary Frequency Modulation for Battery Energy Storage -- 9.4 Simulation Verification -- 9.5 Conclusions -- References -- 10 Application of Deep Learning for Registration Between SAR and Optical Images --

10.1 Introduction -- 10.2 Methodology -- 10.2.1 Using CNN for Feature Extraction -- 10.2.2 Improved Euclidean Distance for Matching -- 10.3 Experimental Results and Analysis -- 10.4 Conclusion -- References -- 11 Research on Digital Architecture of Power Grid and Dynamic Analysis Technology of Digital Project -- 11.1 Introduction. 11.2 Enterprise Middle Office Architecture -- 11.3 Architecture Design of Power Grid Digital Service -- 11.4 Architecture Design of Power Grid Digitalization Technology -- 11.5 Midrange Architecture of Power Grid Enterprises -- 11.6 Dynamic Construction and Calculation of Digital Project Evaluation Index Based on Grid Middle Platform Architecture -- 11.7 Conclusions -- References -- 12 Research on Characteristics and Architecture Application Technology of Power Grid Digital System -- 12.1 Introduction -- 12.2 Enterprise Architecture Theory -- 12.3 Research on Characteristics of Power Grid Digital System -- 12.4 Digital Architecture Design of Power Grid -- 12.5 Technical and Economic Dynamic Analysis of Digital Projects Based on Power Grid Architecture -- 12.6 Conclusion -- References -- 13 Investigation of Vessel Segmentation by U-Net Based on Numerous Datasets -- 13.1 Introduction -- 13.2 Introduction to Deep Learning U-Net Model -- 13.3 Construction and Training of U-Net Model -- 13.3.1 Datasets -- 13.3.2 Data Processing -- 13.3.3 Evaluation Indexes of the U-Net Model -- 13.4 Predictive Generation of Fundus Vessel Segmentation Images -- 13.5 Conclusion -- References -- 14 Design of License Plate Recognition System Based on OpenCV -- 14.1 Introduction -- 14.2 Experimental Principle -- 14.2.1 License Plate Location Method Based on License Plate Color -- 14.2.2 License Plate Location Method Based on Edge Detection -- 14.2.3 License Plate Correction Methods -- 14.2.4 Character Recognition Algorithm Based on Template Matching -- 14.3 Implementation and Results -- 14.3.1 License Plate Positioning Based on License Plate Color -- 14.3.2 License Plate Location Based on License Plate Edge Detection -- 14.3.3 Character Segmentation Method Based on Projection -- 14.3.4 SVM-Based Character Recognition Method -- 14.4 Conclusion -- References. 15 Traveling Wave Solutions of the Nonlinear Gardner Equation with Variable-Coefficients Arising in Stratified Fluids -- 15.1 Introduction -- 15.2 Application of Trial Equation Method -- 15.3 Exact Solutions of Eq. (15.1) -- 15.4 Conclusions -- References -- 16 Research on the Construction of Food Safety Standards Training System Based on 3D Virtual Reality Technology -- 16.1 Introduction -- 16.2 Main Technologies of Foods Safety Standards Comprehensive Platform -- 16.2.1 3D Virtual Simulation Technology -- 16.2.2 Text Mining Technology -- 16.2.3 Knowledge Mapping Technology -- 16.3 Design of Foods Safety Standards Comprehensive Platform System -- 16.4 Functions of Foods Safety Standards Comprehensive Platform System -- 16.4.1 Foods Safety Standards Human Machine Interaction Question-Answering Subsystem -- 16.4.2 Intelligent Scene-Specific Foods Safety Standards Training and Implementation Evaluation Subsystem of Foods Safety Supervisors -- 16.4.3 Intelligent Scene-Specific Foods Safety Standards Training and Implementation Evaluation Subsystem of Foods Practitioners -- 16.4.4 Foods Safety Standards Knowledge Library Information-Based Management Subsystem -- 16.5 Conclusions -- References -- 17 Online Fault Diagnosis of Chemical Processes Based on Attention-Enhanced Encoder-Decoder Network -- 17.1 Introduction -- 17.2 LSTM Network -- 17.3 AEDN Method for Sequential Fault Diagnosis -- 17.4 Case Study on Benchmark Process -- 17.4.1 TE Process Dataset -- 17.4.2 Diagnostic Results and Discussion -- 17.5 Conclusion -- References -- 18 Micro-nano

Satellite Novel Spatial Temperature Measurement Method and Experimental Study -- 18.1 Introduction -- 18.2 Temperature Measurement Principle on DS18B20 -- 18.3 A New Temperature Measurement Experiment of Micro-nano Satellite -- 18.3.1 Thermoscope System Design on DS18B20.
18.3.2 Design of Temperature Measurement Cable Net.

Sommario/riassunto

This book presents high-quality research in the field of 3D imaging technology. The fourth edition of International Conference on 3D Imaging Technology (3DDIT-MSP&DL) continues the good traditions already established by the first three editions of the conference to provide a wide scientific forum for researchers, academia and practitioners to exchange newest ideas and recent achievements in all aspects of image processing and analysis, together with their contemporary applications. The conference proceedings are published in 2 volumes. The main topics of the papers comprise famous trends as: 3D image representation, 3D image technology, 3D images and graphics, and computing and 3D information technology. In these proceedings, special attention is paid at the 3D tensor image representation, the 3D content generation technologies, big data analysis, and also deep learning, artificial intelligence, the 3D image analysis and video understanding, the 3D virtual and augmented reality, and many related areas. The first volume contains papers in 3D image processing, transforms and technologies. The second volume is about computing and information technologies, computer images and graphics and related applications. The two volumes of the book cover a wide area of the aspects of the contemporary multidimensional imaging and the related future trends from data acquisition to real-world applications based on various techniques and theoretical approaches.
