

1. Record Nr.	UNISA996500065803316
Titolo	Discovery science : 25th international conference, DS 2022, Montpellier, France, October 10-12, 2022, proceedings // edited by Poncelet Pascal and Dino Ienco
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	3-031-18840-3
Descrizione fisica	1 online resource (576 pages)
Collana	Lecture Notes in Computer Science ; ; v.13601
Disciplina	006.312
Soggetti	Discoveries in science Research - Data processing
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 -- Keynote Talks -- Unsupervised Model Selection in Outlier Detection: The Elephant in the Room -- Coloring Social Relationships -- 35 Years of 'Scientific Discovery: Computational Explorations of the Creative Processes' - From the Early Days to the State of the Art -- Contents -- Regression and Limited Data -- Model Optimization in Imbalanced Regression -- 1 Introduction -- 2 Related Work -- 3 Imbalanced Regression -- 3.1 Relevance Function -- 3.2 Squared Error Relevance Area (SERA) -- 4 Optimization Loss Function for Imbalanced Regression -- 5 Experimental Study -- 5.1 Experimental Setup -- 5.2 Results on Model Optimization -- 5.3 Results in Out-of-Sample -- 6 Conclusions -- A SERA numerical approximation -- B Tables of Results -- References -- Discovery of Differential Equations Using Probabilistic Grammars -- 1 Introduction -- 2 Related Work -- 3 Methods -- 3.1 Algebraic Equations and Numeric Differentiation -- 3.2 Differential Equations and Direct Simulation -- 3.3 Parallel Computation -- 4 Experimental Evaluation -- 4.1 Experimental Setup -- 4.2 Results -- 5 Conclusion -- References -- Hyperparameter Importance of Quantum Neural Networks Across Small Datasets -- 1 Introduction -- 2 Background -- 2.1 Functional ANOVA -- 2.2 Supervised Learning with Parameterized Quantum Circuits -- 3 Methods -- 3.1 Hyperparameters and

Configuration Space -- 3.2 Assessing Hyperparameter Importance -- 3.3 Verifying Hyperparameter Importance -- 4 Dataset and Inclusion Criteria -- 5 Results -- 5.1 Performance Distributions per Dataset -- 5.2 Surrogate Verification -- 5.3 Marginal Contributions -- 5.4 Random Search Verification -- 6 Conclusion -- References -- ImitAL: Learned Active Learning Strategy on Synthetic Data -- 1 Introduction -- 2 Simulating AL on Synthetic Training Data.

3 Training a Neural Network by Imitation Learning -- 3.1 Imitation Learning -- 3.2 Neural Network Input and Output Encoding -- 3.3 Pre-selection -- 4 Evaluation -- 4.1 Experiment Details -- 4.2 Comparison with Other Active Learning Strategies -- 5 Conclusion -- References -- Incremental/Continual Learning -- Predicting Potential Real-Time Donations in YouTube Live Streaming Services via Continuous-Time Dynamic Graph -- 1 Introduction -- 2 Related Work -- 2.1 Online Live Streaming Service -- 2.2 Dynamic Graph Learning -- 3 Methodology -- 3.1 Dataset -- 3.2 Dynamic Graph Generation -- 3.3 Temporal Graph Neural Network -- 3.4 Strategies for Data Imbalance -- 4 Experiments -- 4.1 Dataset Description -- 4.2 Experiment Setup -- 4.3 Baselines -- 4.4 Evaluation -- 4.5 Case Study -- 5 Conclusion -- References -- Semi-supervised Change Point Detection Using Active Learning -- 1 Introduction -- 2 AL-CPD -- 2.1 Algorithm Outline -- 2.2 Selecting Candidate Change Points -- 2.3 Finding New Candidate Change Points -- 3 Experiments -- 3.1 Datasets -- 3.2 Methodology -- 3.3 Q1: Comparison to Existing Change Point Detection Algorithms -- 3.4 Q2: Labelling Effort of AL-CPD -- 3.5 Q3: Contribution of Each Component of AL-CPD -- 3.6 Q4: Sensitivity Analysis -- 4 Conclusion -- References -- Adaptive Neural Networks for Online Domain Incremental Continual Learning -- 1 Introduction -- 2 Related Work -- 3 Online Domain Incremental Networks -- 4 Experiments -- 5 Conclusion -- References -- Incremental Update of Locally Optimal Classification Rules -- 1 Introduction -- 2 The Lord Algorithm -- 3 Incremental Lord -- 3.1 Incremental Updates -- 3.2 Overall Algorithm -- 4 Experiments -- 4.1 Comparison to HoeffdingTree and VFDR -- 4.2 Sensitivity to Parameter Settings -- 5 Conclusion -- References -- Policy Evaluation with Delayed, Aggregated Anonymous Feedback -- 1 Introduction. 2 Related Work -- 3 Preliminaries -- 4 Policy Evaluation with DAAF -- 5 Methodology -- 6 Results -- 7 Discussion and Future Work -- 8 Summary and Conclusions -- References -- Spatial and Temporal Analysis -- Spatial Cross-Validation for Globally Distributed Data -- 1 Introduction -- 2 Related Work -- 3 Spatial k-Fold Cross-Validation -- 4 Evaluation of Performance -- 4.1 Data Sets -- 4.2 Experimental Design -- 4.3 Analysis of Performance -- 5 Conclusions -- References -- .26em plus .1em minus .1emLeveraging Spatio-Temporal Autocorrelation to Improve the Forecasting of the Energy Consumption in Smart Grids -- 1 Introduction -- 2 Related Work -- 3 The Proposed Method -- 3.1 Modeling the Temporal Autocorrelation -- 3.2 Modeling the Spatial Autocorrelation -- 4 Experiments -- 4.1 Experimental Setting -- 4.2 Results and Discussion -- 5 Conclusion -- References -- Elastic Product Quantization for Time Series -- 1 Introduction -- 2 Background -- 2.1 Dynamic Time Warping -- 2.2 Product Quantization -- 3 Approximate Dynamic Time Warping with Product Quantization -- 3.1 Training Phase -- 3.2 Encoding Time Series -- 3.3 Computing Distances Between Time Series -- 3.4 Memory Cost -- 3.5 Pre-alignment of Subspaces -- 4 Data Mining Applications -- 4.1 NN Search with PQ Approximates -- 4.2 Clustering with PQ Approximates -- 5 Experimental Settings -- 6 Experimental Results -- 6.1 Empirical Time Complexity -- 6.2 1NN Classification -- 6.3 Hierarchical Clustering -- 7 Conclusions -- References -- Stress Detection from

Wearable Sensor Data Using Gramian Angular Fields and CNN -- 1
Introduction -- 2 Materials and Methods -- 2.1 Dataset -- 2.2
Preprocessing -- 2.3 Sample Construction -- 2.4 Convolutional Neural
Network -- 3 Results -- 3.1 Implementation -- 3.2 Experiments -- 4
Conclusions and Future Work -- References.

Multi-attribute Transformers for Sequence Prediction in Business
Process Management -- 1 Introduction -- 2 Definitions and Problem
Statement -- 3 Related Work -- 4 Proposed Architectures -- 4.1
Encoder Architectures -- 4.2 Simplified Decoder Architectures -- 5
Experiments and Discussion -- 6 Conclusions and Final Remarks --
References -- Social Media Analysis -- Data-Driven Prediction of
Athletes' Performance Based on Their Social Media Presence -- 1
Introduction -- 2 Related Work -- 2.1 Social Media as a Mood and
Behaviour Detection Proxy -- 2.2 Social Media as a Distraction Factor
-- 3 Methodology -- 3.1 Data Selection -- 3.2 Data Preparation -- 3.3
Predictive Significance Analysis -- 3.4 Implementation Details -- 4
Results -- 5 Discussion -- 6 Conclusion -- References -- Link
Prediction with Text in Online Social Networks: The Role of Textual
Content on High-Resolution Temporal Data -- 1 Introduction -- 2
Background -- 3 Methodology -- 3.1 Graph Construction and
Sequence-Based Framework -- 3.2 Learning Algorithms for Link
Prediction in Temporal OSNs -- 3.3 Features for Link Prediction -- 4
Dataset -- 5 Results -- 5.1 Results for Traditional Models -- 5.2
Results for Graph Neural Networks -- 6 Discussion -- References --
Weakly Supervised Named Entity Recognition for Carbon Storage Using
Deep Neural Networks -- 1 Introduction -- 2 Overview -- 2.1
Contributions -- 3 Background -- 4 Methodology -- 4.1 Noisy Data Set
Creation -- 4.2 Overcoming Noisy Labels Effect -- 5 Evaluation -- 6
Related Work -- 7 Conclusion -- References -- Predicting User
Dropout from Their Online Learning Behavior -- 1 Introduction -- 2
Background -- 3 Methodology -- 3.1 Data Set -- 3.2 Features -- 3.3
Pre-processing -- 3.4 Predictive Model -- 3.5 Evaluation -- 4 Results
-- 4.1 Predictive Model -- 4.2 Evaluation -- 5 Discussion -- 6
Conclusions -- References.

Efficient Multivariate Data Fusion for Misinformation Detection During
High Impact Events -- 1 Introduction -- 2 Materials and Methods --
2.1 Dataset -- 2.2 High-Level Feature Extraction -- 2.3 Multi-modal
Data Fusion Framework Based on Independent Vector Analysis -- 2.4
Effective Density Model for Capturing Multi-modal Associations -- 2.5
Classification Procedure -- 3 Results and Discussion -- 3.1
Classification Performance -- 3.2 Explainability -- 4 Conclusion --
References -- Fairness and Outlier Detection -- MQ-OFL: Multi-
sensitive Queue-based Online Fair Learning -- 1 Introduction -- 2
Background -- 2.1 Related Work -- 2.2 Fairness Definitions -- 2.3
Gerrymandering -- 2.4 Imbalanced and Drifted Data Stream -- 3 MQ-
OFL Framework -- 3.1 Balanced and Fairness-Aware Pre-processing --
3.2 Classifier Pool -- 3.3 Decision Boundary Adjustment -- 4
Experimental Evaluation -- 4.1 Datasets -- 4.2 Evaluation Metrics --
4.3 Experimental Results -- 5 Conclusion -- References -- Multi-
fairness Under Class-Imbalance -- 1 Introduction -- 2 Related Work --
3 Basics and Multi-Max Mistreatment (MMM) Fairness -- 3.1 Multi-Max
Mistreatment(MMM) Measure -- 4 Multi-Fairness-Aware Learning --
4.1 Multi-discrimination-Free Learning Under Class-Imbalance -- 4.2
The MMM-Fair Boosting Post Pareto (MFBPP) Algorithm -- 5
Experiments -- 5.1 Experimental Settings -- 5.2 Evaluation Results --
5.3 Internal Analysis -- 5.4 Flexibility of MFBPP -- 6 Conclusions and
Outlook -- References -- When Correlation Clustering Meets Fairness
Constraints -- 1 Introduction -- 2 Related Work -- 3 Fairness

Constraints in Correlation Clustering -- 3.1 Background on Correlation Clustering -- 3.2 Problem Statement -- 4 Algorithm -- 5 Fairness Evaluation -- 6 Experimental Methodology -- 6.1 Competing Methods -- 6.2 Data -- 6.3 Evaluation Goals -- 6.4 Hyper-parameters and Configurations -- 7 Results.
8 Conclusions.
