

## Adaptive Stream Mining Pattern Learning And Mining From Evolving Data Streams Volume 207 Frontiers In Artificial Intelligence And Applications

This book presents a compilation of selected papers from the first International Conference on Big Data Analysis and Deep Learning Applications (ICBDL 2018), and focuses on novel techniques in the fields of big data analysis, machine learning, system monitoring, image processing, conventional neural networks, communication, industrial information, and their applications. Readers will find insights to help them realize more efficient algorithms and systems used in real-life applications and contexts, making the book an essential reference guide for academic researchers, professionals, software engineers in the industry, and regulators of aviation authorities.

This book constitutes the refereed post-conference proceedings of the 8th International Workshop on New Frontiers in Mining Complex Patterns, NFMCP 2019, held in conjunction with ECML-PKDD 2019 in Würzburg, Germany, in September 2019. The workshop focused on the latest developments in the analysis of complex and massive data sources, such as blogs, event or log

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data, medical data, spatio-temporal data, social networks, mobility data, sensor data and streams.

These proceedings present the results of the Eleventh International Conference on Dependability and Complex Systems DepCoS-RELCOMEX which took place in a picturesque Brunów Palace in Poland from 27th June to 1st July, 2016. DepCoS-RELCOMEX is a series of international conferences organized annually by Department of Computer Engineering of Wrocław University of Science and Technology since 2006. The roots of the series go as far back as to the seventies of the previous century – the first RELCOMEX conference took place in 1977 – and now its main aim is to promote a multi-disciplinary approach to dependability problems in theory and engineering practice of complex systems. Complex systems, nowadays most often computer-based and distributed, are built upon a variety of technical, information, software and human resources. The challenges in their design, analysis and maintenance not only originate from the involved technical and organizational structures but also from the complexity of the information processes that must be efficiently executed in a diverse, often hostile operational environment. Traditional methods of reliability evaluation focused only on technical resources are usually insufficient in this context and more innovative, multidisciplinary methods of dependability analysis

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must be applied. The diversity of the topics which need to be considered is well illustrated by the selection of the submissions in these proceedings with their subjects ranging from mathematical models and design methodologies through software engineering and data security issues up to practical problems in technical, e.g. transportation, systems.

The two-volume set LNCS 12415 and 12416 constitutes the refereed proceedings of of the 19th International Conference on Artificial Intelligence and Soft Computing, ICAISC 2020, held in Zakopane, Poland\*, in October 2020. The 112 revised full papers presented were carefully reviewed and selected from 265 submissions. The papers included in the first volume are organized in the following six parts: neural networks and their applications; fuzzy systems and their applications; evolutionary algorithms and their applications; pattern classification; bioinformatics, biometrics and medical applications; artificial intelligence in modeling and simulation. The papers included in the second volume are organized in the following four parts: computer vision, image and speech analysis; data mining; various problems of artificial intelligence; agent systems, robotics and control. \*The conference was held virtually due to the COVID-19 pandemic.

This book constitutes the refereed proceedings of the 19th European Conference on Genetic Programming, EuroGP 2016, held in Porto, Portugal,

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in March/April 2016 co-located with the Evo\*2016 events: EvoCOP, EvoMUSART, and EvoApplications. The 11 revised full papers presented together with 8 poster papers were carefully reviewed and selected from 36 submissions. The wide range of topics in this volume reflects the current state of research in the field. Thus, we see topics as diverse as semantic methods, recursive programs, grammatical methods, coevolution, Cartesian GP, feature selection, metaheuristics, evolvability, and fitness predictors; and applications including image processing, one-class classification, SQL injection attacks, numerical modelling, streaming data classification, creation and optimisation of circuits, multi-class classification, scheduling in manufacturing and wireless networks.

with Practical Examples in MOA

Machine Learning for Data Streams

Smart Intelligent Computing and Applications

Trends in Applied Knowledge-Based Systems and Data Science

Algorithms on Trees and Graphs

Proof Methods and Theorem Proving

Cyber-Physical Systems

This book constitutes the refereed proceedings of the 5th IFIP WG 13.2 International Conference on Human-Centered Software Engineering, HCSE

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2014, held in Paderborn, Germany, in September 2014. The 13 full papers and 10 short papers presented together with one keynote were carefully reviewed and selected from 35 submissions. The papers cover various topics such as integration of software engineering and user-centered design; HCI models and model-driven engineering; incorporating guidelines and principles for designing usable products in the development process; usability engineering; methods for user interface design; patterns in HCI and HCSE; software architectures for user interfaces; user interfaces for special environments; representations for design in the development process; working with iterative and agile process models in HCSE; social and organizational aspects in the software development lifecycle; human-centric software development tools; user profiles and mental models; user requirements and design constraints; and user experience and software design. This book presents a unique approach to stream data mining. Unlike the vast majority of previous approaches, which are largely based on heuristics, it highlights methods and algorithms that are mathematically justified. First, it describes how to adapt static decision trees to accommodate data streams; in this regard, new splitting criteria are developed to guarantee that they are asymptotically equivalent to the classical batch tree. Moreover, new decision trees are designed, leading to the original concept of hybrid

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trees. In turn, nonparametric techniques based on Parzen kernels and orthogonal series are employed to address concept drift in the problem of non-stationary regressions and classification in a time-varying environment. Lastly, an extremely challenging problem that involves designing ensembles and automatically choosing their sizes is described and solved. Given its scope, the book is intended for a professional audience of researchers and practitioners who deal with stream data, e.g. in telecommunication, banking, and sensor networks. This comprehensive reference consists of 18 chapters from prominent researchers in the field. Each chapter is self-contained, and synthesizes one aspect of frequent pattern mining. An emphasis is placed on simplifying the content, so that students and practitioners can benefit from the book. Each chapter contains a survey describing key research on the topic, a case study and future directions. Key topics include: Pattern Growth Methods, Frequent Pattern Mining in Data Streams, Mining Graph Patterns, Big Data Frequent Pattern Mining, Algorithms for Data Clustering and more. Advanced-level students in computer science, researchers and practitioners from industry will find this book an invaluable reference.

Contains a version of the author's PhD dissertation and focuses on proof methods and theorem proving for conditional and preferential logics. This book introduces proof methods (sequent and tableau

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calculi) for conditional and preferential logics, as well as theorem provers obtained by implementing the proposed calculi.

This book presents the proceedings of the International Conference on Computer Networks, Big Data and IoT (ICCBI-2018), held on December 19-20, 2018 in Madurai, India. In recent years, advances in information and communication technologies [ICT] have collectively aimed to streamline the evolution of internet applications. In this context, increasing the ubiquity of emerging internet applications with an enhanced capability to communicate in a distributed environment has become a major need for existing networking models and applications. To achieve this, Internet of Things [IoT] models have been developed to facilitate a smart interconnection and information exchange among modern objects - which plays an essential role in every aspect of our lives. Due to their pervasive nature, computer networks and IoT can easily connect and engage effectively with their network users. This vast network continuously generates data from heterogeneous devices, creating a need to utilize big data, which provides new and unprecedented opportunities to process these huge volumes of data. This International Conference on Computer Networks, Big Data, and Internet of Things [ICCBI] brings together state-of-the-art research work, which briefly describes advanced IoT applications in the era of big data. As such, it offers valuable insights for

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researchers and scientists involved in developing next-generation, big-data-driven IoT applications to address the real-world challenges in building a smartly connected environment.

19th European Conference, EuroGP 2016, Porto, Portugal, March 30 - April 1, 2016, Proceedings

Proceedings of the Fourth International Workshop (WoMO 2010)

19th European Conference on Artificial Intelligence, 16-20 August 2010, Lisbon, Portugal : Including Prestigious Applications of Artificial Intelligence (PAIS-2010) : Proceedings

Green IT Engineering: Concepts, Models, Complex Systems Architectures  
Proceedings of the Second International Conference on SCI 2018, Volume 2

Ontologies and Semantic Technologies for Intelligence

19th International Conference, ICAISC 2020, Zakopane, Poland, October 12-14, 2020, Proceedings, Part I

The book is a collection of high-quality peer-reviewed research papers presented at the third International Conference on Innovations in Computer Science and Engineering (ICICSE 2015) held at Guru Nanak Institutions, Hyderabad, India during 7 – 8 August 2015. The book discusses a wide variety of industrial, engineering and scientific applications of the emerging techniques. Researchers from academic and industry present their original work and exchange ideas, information, techniques and



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applications in the field of Communication, Computing, and Data Science and Analytics. The book is devoted to the analysis of big data in order to extract from these data hidden patterns necessary for making decisions about the rational behavior of complex systems with the different nature that generate this data. To solve these problems, a group of new methods and tools is used, based on the self-organization of computational processes, the use of crisp and fuzzy cluster analysis methods, hybrid neural-fuzzy networks, and others. The book solves various practical problems. In particular, for the tasks of 3D image recognition and automatic speech recognition large-scale neural networks with applications for Deep Learning systems were used. Application of hybrid neuro-fuzzy networks for analyzing stock markets was presented. The analysis of big historical, economic and physical data revealed the hidden Fibonacci pattern about the course of systemic world conflicts and their connection with the Kondratieff big economic cycles and the Schwabe–Wolf solar activity cycles. The book is useful for system analysts and practitioners working with complex systems in various spheres of human activity. Data mining is already incorporated into the business processes in sectors such as health, retail, automotive, finance, telecom and insurance as well as in government. This book contains extended versions of a selection of papers presented at a series of workshops held between 2005 and 2008 on the subject of data mining for business applications.

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The two-volume set LNAI 12319 and 12320 constitutes the proceedings of the 9th Brazilian Conference on Intelligent Systems, BRACIS 2020, held in Rio Grande, Brazil, in October 2020. The total of 90 papers presented in these two volumes was carefully reviewed and selected from 228 submissions. The contributions are organized in the following topical section: Part I: Evolutionary computation, metaheuristics, constraints and search, combinatorial and numerical optimization; neural networks, deep learning and computer vision; and text mining and natural language processing. Part II: Agent and multi-agent systems, planning and reinforcement learning; knowledge representation, logic and fuzzy systems; machine learning and data mining; and multidisciplinary artificial and computational intelligence and applications. Due to the Corona pandemic BRACIS 2020 was held as a virtual event.

The rise of intelligence and computation within technology has created an eruption of potential applications in numerous professional industries. Techniques such as data analysis, cloud computing, machine learning, and others have altered the traditional processes of various disciplines including healthcare, economics, transportation, and politics. Information technology in today ' s world is beginning to uncover opportunities for experts in these fields that they are not yet aware of. The exposure of specific instances in which these devices are being implemented will assist other specialists in how to successfully utilize these transformative tools with the appropriate amount of discretion, safety, and awareness. Considering the level of diverse uses and practices

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throughout the globe, the fifth edition of the Encyclopedia of Information Science and Technology series continues the enduring legacy set forth by its predecessors as a premier reference that contributes the most cutting-edge concepts and methodologies to the research community. The Encyclopedia of Information Science and Technology, Fifth Edition is a three-volume set that includes 136 original and previously unpublished research chapters that present multidisciplinary research and expert insights into new methods and processes for understanding modern technological tools and their applications as well as emerging theories and ethical controversies surrounding the field of information science. Highlighting a wide range of topics such as natural language processing, decision support systems, and electronic government, this book offers strategies for implementing smart devices and analytics into various professional disciplines. The techniques discussed in this publication are ideal for IT professionals, developers, computer scientists, practitioners, managers, policymakers, engineers, data analysts, and programmers seeking to understand the latest developments within this field and who are looking to apply new tools and policies in their practice. Additionally, academicians, researchers, and students in fields that include but are not limited to software engineering, cybersecurity, information technology, media and communications, urban planning, computer science, healthcare, economics, environmental science, data management, and political science will benefit from the extensive knowledge compiled within this publication.

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8th International Symposium on Neural Networks, ISNN 2011, Guilin, China, May 29--June 1, 2011, Proceedings, Part III

8th International Workshop, NFMCP 2019, Held in Conjunction with ECML-PKDD 2019, Würzburg, Germany, September 16, 2019, Revised Selected Papers

Pattern Learning and Mining from Evolving Data Streams

New Frontiers in Mining Complex Patterns

29th International Conference on Industrial Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2016, Morioka, Japan, August 2-4, 2016, Proceedings

Stream Data Mining: Algorithms and Their Probabilistic Properties

Big Data: Conceptual Analysis and Applications

Presents the advances in decision support theory and practice with a focus on bridging the socio-technical gap. This book covers a wide range of topics including: Understanding DM, Design of DSS, Web 2.0 Systems in Decision Support, Business Intelligence and Data Warehousing, Applications of Multi-Criteria Decision Analysis, and more.

This book constitutes the refereed conference proceedings of the 29th International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2016, held in Morioka, Japan, in August 2-4, 2016. The 80 revised full papers presented were carefully reviewed and selected

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from 168 submissions. They are organized in topical sections: data science; knowledge base systems; natural language processing and sentiment analysis; semantic Web and social networks; computer vision; medical diagnosis system and bio-informatics; applied neural networks; innovations in intelligent systems and applications; decision support systems; adaptive control; soft computing and multi-agent systems; evolutionary algorithms and heuristic search; system integration for real-life applications.

As the age of Big Data emerges, it becomes necessary to take the five dimensions of Big Data- volume, variety, velocity, volatility, and veracity- and focus these dimensions towards one critical emphasis - value. The Encyclopedia of Business Analytics and Optimization confronts the challenges of information retrieval in the age of Big Data by exploring recent advances in the areas of knowledge management, data visualization, interdisciplinary communication, and others. Through its critical approach and practical application, this book will be a must-have reference for any professional, leader, analyst, or manager interested in making the most of the knowledge resources at their disposal.

Contains the proceedings of the nineteenth biennial European Conference on Artificial Intelligence (ECAI), which since 1974 has been Europe's principal opportunity for researchers to present and hear about the very best contemporary AI research in all its diverse forms and applications.

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The aim of the KBIES series is to report on the tremendous range of applications arising out of investigations into intelligent systems, coupled with the latest generic research that makes these applications possible. The series provides a leading resource for researchers, engineers, managers and all others concerned with this area of research, or wanting to know more about it.

Human Language Technologies - the Baltic Perspective

New Trends in Software Methodologies, Tools and Techniques

Handbook of Research on Pattern Engineering System Development for Big Data Analytics

Advances in Computer Science for Engineering and Education

Bridging the Socio-technical Gap in Decision Support Systems

Proceedings of the Eleventh International Conference on Dependability and Complex Systems DepCoS-RELCOMEX. June 27–July 1, 2016, Brunów, Poland

Design for Innovative Value Towards a Sustainable Society

The widespread use of XML in business and scientific databases has prompted the development of methodologies, techniques, and systems for effectively managing and analyzing XML data. This has increasingly attracted the attention of different research communities, including database, information retrieval, pattern recognition, and machine learning, from which several proposals have been offered to address problems in XML data management and knowledge discovery. XML Data Mining: Models, Methods, and

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Applications aims to collect knowledge from experts of database, information retrieval, machine learning, and knowledge management communities in developing models, methods, and systems for XML data mining. This book addresses key issues and challenges in XML data mining, offering insights into the various existing solutions and best practices for modeling, processing, analyzing XML data, and for evaluating performance of XML data mining algorithms and systems.

Graph algorithms is a well-established subject in mathematics and computer science. Beyond classical application fields, such as approximation, combinatorial optimization, graphics, and operations research, graph algorithms have recently attracted increased attention from computational molecular biology and computational chemistry. Centered around the fundamental issue of graph isomorphism, this text goes beyond classical graph problems of shortest paths, spanning trees, flows in networks, and matchings in bipartite graphs. Advanced algorithmic results and techniques of practical relevance are presented in a coherent and consolidated way. This book introduces graph algorithms on an intuitive basis followed by a detailed exposition in a literate programming style, with correctness proofs as well as worst-case analyses. Furthermore, full C++ implementations of all algorithms presented are given using the LEDA library of efficient data structures and algorithms.

Proceedings of the Fourth International Confe. This book contains papers from the Fourth

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International Conference on Human Language Technologies the Baltic Perspective Baltic HLT 2010, held in Riga in October 2010. This conference is the latest in a series which provides a forum for sharing recent

Featuring chapters by selected contributors to the second international Ontology for the Intelligence Community (OIC) conference, this book offers a partial technology roadmap for decision makers in the field of information integration, sharing and situational awareness in the use of ontologies and semantic technologies for intelligence.

This volume constitutes the proceedings of two collocated international conferences: EUSFLAT-2017 – the 10th edition of the flagship Conference of the European Society for Fuzzy Logic and Technology held in Warsaw, Poland, on September 11–15, 2017, and IWIFSGN'2017 – The Sixteenth International Workshop on Intuitionistic Fuzzy Sets and Generalized Nets, held in Warsaw on September 13–15, 2017. The conferences were organized by the Systems Research Institute, Polish Academy of Sciences, Department IV of Engineering Sciences, Polish Academy of Sciences, and the Polish Operational and Systems Research Society in collaboration with the European Society for Fuzzy Logic and Technology (EUSFLAT), the Bulgarian Academy of Sciences and various European universities. The aim of the EUSFLAT-2017 was to bring together theoreticians and practitioners working on fuzzy logic, fuzzy systems, soft computing and related areas and to provide a platform for exchanging ideas and discussing the latest trends and ideas,



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while the aim of IWIFSGN'2017 was to discuss new developments in extensions of the concept of a fuzzy set, such as an intuitionistic fuzzy set, as well as other concepts, like that of a generalized net. The papers included, written by leading international experts, as well as the special sessions and panel discussions contribute to the development the field, strengthen collaborations and intensify networking.

Proceedings of: EUSFLAT- 2017 – The 10th Conference of the European Society for Fuzzy Logic and Technology, September 11-15, 2017, Warsaw, Poland IWIFSGN'2017 – The Sixteenth International Workshop on Intuitionistic Fuzzy Sets and Generalized Nets, September 13-15, 2017, Warsaw, Poland, Volume 3

5th IFIP WG 13.2 International Conference, HCSE 2014, Paderborn, Germany, September 16-18, 2014. Proceedings

Encyclopedia of Information Science and Technology, Fifth Edition

Computational Models of Argument

With Python Code

Human-Centered Software Engineering

Proceedings of COMMA 2010

***Presents papers from the Third Conference on Computational Models of Argument, held in September 2010 in Desanzano del Garda, Italy. Providing a view of this important research field, this book is of interest to those***

*involved in the use and development of artificial intelligence systems. Since the first EcoDesign International Symposium held in 1999, this symposium has led the research and practices of environmentally conscious design of products, services, manufacturing systems, supply chain, consumption, as well as economics and society. EcoDesign 2011 - the 7th International Symposium on Environmentally Conscious Design and Inverse Manufacturing - was successfully held in the Japanese old capital city of Kyoto, on November 30th – December 2nd, 2011. The subtitle of EcoDesign 2011 is to “design for value innovation towards sustainable society.” During this event, presenters discussed the way to achieve both drastic environmental consciousness and value innovation in order to realise a sustainable society.*

*The three-volume set LNCS 6675, 6676 and 6677 constitutes the refereed proceedings of the 8th International Symposium on Neural Networks, ISNN 2011, held in Guilin, China, in May/June 2011. The total of 215 papers presented in all three volumes were carefully reviewed and selected from 651 submissions. The contributions are structured in topical sections on computational neuroscience and cognitive science; neurodynamics and complex systems; stability and convergence analysis; neural network*

***models; supervised learning and unsupervised learning; kernel methods and support vector machines; mixture models and clustering; visual perception and pattern recognition; motion, tracking and object recognition; natural scene analysis and speech recognition; neuromorphic hardware, fuzzy neural networks and robotics; multi-agent systems and adaptive dynamic programming; reinforcement learning and decision making; action and motor control; adaptive and hybrid intelligent systems; neuroinformatics and bioinformatics; information retrieval; data mining and knowledge discovery; and natural language processing.***

***Due to the growing use of web applications and communication devices, the use of data has increased throughout various industries. It is necessary to develop new techniques for managing data in order to ensure adequate usage. The Handbook of Research on Pattern Engineering System Development for Big Data Analytics is a critical scholarly resource that examines the incorporation of pattern management in business technologies as well as decision making and prediction process through the use of data management and analysis. Featuring coverage on a broad range of topics such as business intelligence, feature extraction, and data collection, this publication is geared towards professionals, academicians,***

***practitioners, and researchers seeking current research on the development of pattern management systems for business applications. Modularity, in its different shapes and forms, remains one of the central research topics in ontology engineering, still catching up with 40 years of related research in software engineering. The workshops on Modular Ontologies (WoMO) bring together researchers from different disciplines who study the problem of modularity in ontologies at a fundamental level, develop design tools for distributed ontology engineering and apply modularity in different use cases and application scenarios The contributions in this volume are of interest to researchers, students and practitioners interested in Semantic Web ontologies, their languages and tools and specifically, to research groups working on ontology modularization and integration problems and corresponding tools. They should also be of interest to the broader communities of knowledge representation and reasoning, information integration, description logics and ontology languages, distributed systems and to practitioners from Semantic Web and other emerging application domains for ontologies such as life sciences, robotics, e-business and ambient intelligence***

***Data Mining for Business Applications***

**ECAI 2010**

**9th Brazilian Conference, BRACIS 2020, Rio Grande, Brazil, October 20–23, 2020, Proceedings, Part II**

**XML Data Mining: Models, Methods, and Applications  
Intelligent Systems**

**Conditional and Preferential Logics  
Models, Methods, and Applications**

Contains 30 papers from the SoMeT\_10 international conference on new trends in software methodology, tools and techniques in Yokohama, Japan. This book offers an opportunity for the software science community to reflect on where they are and how they can work to achieve an optimally harmonized performance between the design tool and the end-user.

This book is a significant contribution to the subject of mining time-changing data streams and addresses the design of learning algorithms for this purpose. It introduces new contributions on several different aspects of the problem, identifying research opportunities and increasing the scope for applications. It also includes an in-depth study of stream mining and a theoretical analysis of proposed methods and algorithms. The first section is concerned with the use of an adaptive sliding window algorithm (ADWIN). Since this has rigorous performance guarantees, using it in place of counters or accumulators, it offers the possibility of extending such guarantees to learning and mining algorithms

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not initially designed for drifting data. Testing with several methods, including Naive Bayes, clustering, decision trees and ensemble methods, is discussed as well. The second part of the book describes a formal study of connected acyclic graphs, or 'trees', from the point of view of closure-based mining, presenting efficient algorithms for subtree testing and for mining ordered and unordered frequent closed trees. Lastly, a general methodology to identify closed patterns in a data stream is outlined. This is applied to develop an incremental method, a sliding-window based method, and a method that mines closed trees adaptively from data streams. These are used to introduce classification methods for tree data streams."

This compendium is a completely revised version of an earlier book, *Data Mining in Time Series Databases*, by the same editors. It provides a unique collection of new articles written by leading experts that account for the latest developments in the field of time series and data stream mining. The emerging topics covered by the book include weightless neural modeling for mining data streams, using ensemble classifiers for imbalanced and evolving data streams, document stream mining with active learning, and many more. In particular, it addresses the domain of streaming data, which has recently become one of the emerging topics in Data Science, Big Data, and related areas. Existing titles do not provide sufficient information on this topic. Contents: Streaming Data Mining with Massive Online Analytics (MOA) (Albert Bifet, Jesse Read, Geoff Holmes and Bernhard Pfahringer) Weightless Neural Modeling for Mining Data Streams

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(Douglas O Cardoso, João Gama and Felipe França) Ensemble Classifiers for Imbalanced and Evolving Data Streams (Dariusz Brzezinski and Jerzy Stefanowski) Consensus Learning for Sequence Data (Andreas Nienkötter and Xiaoyi Jiang) Clustering-Based Classification of Document Streams with Active Learning (Mark Last, Maxim Stoliar and Menahem Friedman) Supporting the Mining of Big Data by Means of Domain Knowledge During the Pre-mining Phases (Rémon Cornelisse and Sunil Choenni) Data Analytics: Industrial Perspective & Solutions for Streaming Data (Mohsin Munir, Sebastian Baumbach, Ying Gu, Andreas Dengel and Sheraz Ahmed) Readership: Researchers, academics, professionals and graduate students in artificial intelligence, machine learning, databases, and information science. Keywords: Time Series; Data Streams; Big Data; Internet of Things; Concept Drift; Sequence Mining; Episode Mining; Incremental Learning; Active Learning Review: 0

Adaptive Stream Mining Pattern Learning and Mining from Evolving Data Streams IOS Press

Ontology began life in ancient times as a fundamental part of philosophical enquiry concerned with the analysis and categorisation of what exists. In recent years, the subject has taken a practical turn with the advent of complex computerised information systems which are reliant on robust and coherent representations of their subject matter. The systematisation and elaboration of such representations and their associated reasoning techniques constitute the modern discipline of formal ontology, which is now being applied to such diverse

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domains as artificial intelligence, computational linguistics, bioinformatics, GIS, knowledge engineering, information retrieval and the Semantic Web. Researchers in all these areas are becoming increasingly aware of the need for serious engagement with ontology, understood as a general theory of the types of entities and relations making up their respective domains of enquiry, to provide a solid foundation for their work. The conference series Formal Ontology in Information Systems (FOIS) provides a meeting point for researchers from these and other disciplines with an interest in formal ontology, where both theoretical issues and concrete applications can be explored in a spirit of genuine interdisciplinarity. This volume contains the proceedings of the sixth FOIS conference, held in Toronto, Canada, during 11-14 May 2010, including invited talks by Francis Jeffrey Pelletier, John Bateman, and Alan Rector and the 28 peer-reviewed submissions selected for presentation at the conference, ranging from foundational issues to more application-oriented topics.

Proceedings of the Third ICICSE, 2015

Innovations in Computer Science and Engineering

Formal Ontology in Information Systems

5th International Symposium on Data Mining Applications

Proceedings of the Sixth International Conference (Fois 2010)

Frequent Pattern Mining

A hands-on approach to tasks and techniques in data stream mining and real-



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time analytics, with examples in MOA, a popular freely available open-source software framework. Today many information sources—including sensor networks, financial markets, social networks, and healthcare monitoring—are so-called data streams, arriving sequentially and at high speed. Analysis must take place in real time, with partial data and without the capacity to store the entire data set. This book presents algorithms and techniques used in data stream mining and real-time analytics. Taking a hands-on approach, the book demonstrates the techniques using MOA (Massive Online Analysis), a popular, freely available open-source software framework, allowing readers to try out the techniques after reading the explanations. The book first offers a brief introduction to the topic, covering big data mining, basic methodologies for mining data streams, and a simple example of MOA. More detailed discussions follow, with chapters on sketching techniques, change, classification, ensemble methods, regression, clustering, and frequent pattern mining. Most of these chapters include exercises, an MOA-based lab session, or both. Finally, the book discusses the MOA software, covering the MOA graphical user interface, the command line, use of its API, and the development of new methods within MOA. The book will be an essential reference for readers who want to use data stream mining as a tool, researchers in innovation or data stream mining, and

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programmers who want to create new algorithms for MOA.

This volume provides a comprehensive state of the art overview of a series of advanced trends and concepts that have recently been proposed in the area of green information technologies engineering as well as of design and development methodologies for models and complex systems architectures and their intelligent components. The contributions included in the volume have their roots in the authors' presentations, and vivid discussions that have followed the presentations, at a series of workshop and seminars held within the international TEMPUS-project GreenCo project in United Kingdom, Italy, Portugal, Sweden and the Ukraine, during 2013-2015 and at the 1st - 5th Workshops on Green and Safe Computing (GreenSCom) held in Russia, Slovakia and the Ukraine. The book presents a systematic exposition of research on principles, models, components and complex systems and a description of industry- and society-oriented aspects of the green IT engineering. A chapter-oriented structure has been adopted for this book following a "vertical view" of the green IT, from hardware (CPU and FPGA) and software components to complex industrial systems. The 15 chapters of the book are grouped into five sections: (1) Methodology and Principles of Green IT Engineering for Complex Systems, (2) Green Components and Programmable Systems, (3) Green Internet Computing,

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Cloud and Communication Systems, (4) Modeling and Assessment of Green Computer Systems and Infrastructures, and (5) Green PLC-Based Systems for Industry Applications. The chapters provide an easy to follow, comprehensive introduction to the topics that are addressed, including the most relevant references, so that anyone interested in them can start the study by being able to easily find an introduction to the topic through these references. At the same time, all of them correspond to different aspects of the work in progress being carried out by various research groups throughout the world and, therefore, provide information on the state of the art of some of these topics, challenges and perspectives.

This book offers ideas to help improve digital technologies and increase their efficiency during implementation and application for researchers and practitioners. The outstanding position of the book among others is that it dwells with cyber-physical systems' progress and proposes ideas and finding around digital tools and technologies and their application. A distinguished contribution is in presenting results on Digital Twins development and application, enhancing approaches of communication and information transferring between cyber-physical systems connected within the Internet of things platforms, computer linguistic as a part of cyber-physical systems, intelligent cybersecurity and

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computer vision systems. The target audience of this book also includes practitioners and experts, as well as state authorities and representatives of manufacturing and industry who are interested in creating and implementing of cyber-physical systems in framework of digitalization projects.

This book features high-quality, peer-reviewed research papers presented at the First International Conference on Computer Science, Engineering and Education Applications (ICCSEEA2018), held in Kiev, Ukraine on 18–20 January 2018, and organized jointly by the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” and the International Research Association of Modern Education and Computer Science. The state-of-the-art papers discuss topics in computer science, such as neural networks, pattern recognition, engineering techniques, genetic coding systems, deep learning with its medical applications, as well as knowledge representation and its applications in education. It is an excellent reference resource for researchers, graduate students, engineers, management practitioners, and undergraduate students interested in computer science and their applications in engineering and education.

The 5th Symposium on Data Mining Applications (SDMA 2018) provides valuable opportunities for technical collaboration among data mining and machine learning researchers in Saudi Arabia, Gulf Cooperation Council (GCC) countries and the

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Middle East region. This book gathers the proceedings of the SDMA 2018. All papers were peer-reviewed based on a strict policy concerning the originality, significance to the area, scientific vigor and quality of the contribution, and address the following research areas. • Applications: Applications of data mining in domains including databases, social networks, web, bioinformatics, finance, healthcare, and security. • Algorithms: Data mining and machine learning foundations, algorithms, models, and theory. • Text Mining: Semantic analysis and mining text in Arabic, semi-structured, streaming, multimedia data. • Framework: Data mining frameworks, platforms and systems implementation. • Visualizations: Data visualization and modeling.

Digital Technologies and Applications

Artificial Intelligence and Soft Computing

Proceeding of the International Conference on Computer Networks, Big Data and IoT (ICCBI - 2018)

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*computing and informatics. The theme of the book broadly focuses on various innovation paradigms in system knowledge, intelligence and sustainability that may be applied to provide realistic solution to varied problems in society, environment and industries. The volume publishes quality work pertaining to the scope of the conference which is extended towards deployment of emerging computational and knowledge transfer approaches, optimizing solutions in varied disciplines of science, technology and healthcare.*

*Advances in Neural Networks -- ISSN 2011*

*Big Data Analysis and Deep Learning Applications*

*Proceedings of EcoDesign 2011: 7th International Symposium on Environmentally Conscious Design and Inverse Manufacturing*

*Proceedings of the First International Conference on Big Data Analysis and Deep Learning*

*Proceedings of the 9th SoMeT\_10*

*Adaptive Stream Mining*

*Genetic Programming*