

# Online Library 2013 Ieee Paper On Data Stream Mining Read Pdf Free

**Machine Learning for Data Streams Spatio-Temporal Data Streams Data Stream Management Data Streams Learning from Data Streams Novelty Detection for Multivariate Data Streams with Probabilistic Models Data Stream Management Data Stream Management Machine Learning for Data Streams *Learning from Data Streams in Evolving Environments* Spatio-Temporal Data Streams Data Stream Load Shedding Stream Data Management An Integrated Approach to Autonomous Computation in Data Streaming Applications Demand-based Data Stream Gathering, Processing, and Transmission Bio-inspired Algorithms for Data Streaming and Visualization, Big Data Management, and Fog Computing Stream Data Processing: A Quality of Service Perspective Data Stream Mining & Processing Anomaly Detection and Complex Event Processing Over IoT Data Streams Scalable Data Streaming with Amazon Kinesis Optimization and Approximation Techniques for Data Streaming Queries Proceedings of the 2nd International Conference on Data Engineering and Communication Technology Real-Time & Stream Data Management Sentiment Analysis and Knowledge Discovery in Contemporary Business Large-Scale Data Streaming, Processing, and Blockchain Security FPGA to High speed ADC Data streaming *Shaping the Future of ICT PROCESSING & ANALYSING LARGE & COMPLEX DATA STREAMS USING BIG DATA* **Systems Performance****

**Modeling Information Security Kafka Streams in Action Proceedings 2004 VLDB Conference Geo-Informatics in Resource Management and Sustainable Ecosystem Real-Time Analytics Proceedings. 20. Workshop Computational Intelligence, Dortmund, 1. Dezember - 3. Dezember 2010 Stream Data Processing: A Quality of Service Perspective Cloud Computing, Security, Privacy in New Computing Environments Research Anthology on Decision Support Systems and Decision Management in Healthcare, Business, and Engineering Handbook of Research on Investigations in Artificial Life Research and Development**

### **Real-Time & Stream Data Management** Nov 16 2020

While traditional databases excel at complex queries over historical data, they are inherently pull-based and therefore ill-equipped to push new information to clients. Systems for data stream management and processing, on the other hand, are natively

push-oriented and thus facilitate reactive behavior. However, they do not retain data indefinitely and are therefore not able to answer historical queries. The book provides an overview over the different (push-based) mechanisms for data retrieval in each system class and the semantic differences between them. It also provides a comprehensive

overview over the current state of the art in real-time databases. It first includes an in-depth system survey of today's real-time databases: Firebase, Meteor, RethinkDB, Parse, Baqend, and others. Second, the high-level classification scheme illustrated above provides a gentle introduction into the system space of data

management: Abstracting from the extreme system diversity in this field, it helps readers build a mental model of the available options.

### **Handbook of Research on Investigations in Artificial Life Research and**

**Development** Jul 01 2019

Research on artificial life is critical to solving various dynamic obstacles individuals face on a daily basis. From electric wheelchairs to navigation, artificial life can play a role in improving both the simple and complex aspects of civilian life. The Handbook of Research on Investigations in Artificial Life Research and Development is a vital scholarly reference source that examines

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emergent research in handling real-world problems through the application of various computation technologies and techniques. Examining topics such as computational intelligence, multi-agent systems, and fuzzy logic, this publication is a valuable resource for academicians, scientists, researchers, and individuals interested in artificial intelligence developments.

### **Machine Learning for Data**

**Streams** Jan 31 2022 A hands-on approach to tasks and techniques in data stream mining and real-time analytics, with examples in MOA, a popular freely available open-source software framework.

3/28

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

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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

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an essential reference for readers who want to use data stream mining as a tool, researchers in innovation or data stream mining, and programmers who want to create new algorithms for MOA.

### **Data Stream Management**

Mar 01 2022 This volume focuses on the theory and practice of data stream management, and the novel challenges this emerging domain poses for data-management algorithms, systems, and applications. The collection of chapters, contributed by authorities in the field, offers a comprehensive introduction to both the

4/28

algorithmic/theoretical foundations of data streams, as well as the streaming systems and applications built in different domains. A short introductory chapter provides a brief summary of some basic data streaming concepts and models, and discusses the key elements of a generic stream query processing architecture. Subsequently, Part I focuses on basic streaming algorithms for some key analytics functions (e.g., quantiles, norms, join aggregates, heavy hitters) over streaming data. Part II then examines important techniques for basic stream mining tasks (e.g., clustering, classification, frequent itemsets). Part III discusses a number of

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advanced topics on stream processing algorithms, and Part IV focuses on system and language aspects of data stream processing with surveys of influential system prototypes and language designs. Part V then presents some representative applications of streaming techniques in different domains (e.g., network management, financial analytics). Finally, the volume concludes with an overview of current data streaming products and new application domains (e.g. cloud computing, big data analytics, and complex event processing), and a discussion of future directions in this exciting field. The book provides a comprehensive

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overview of core concepts and technological foundations, as well as various systems and applications, and is of particular interest to students, lecturers and researchers in the area of data stream management.

### **Large-Scale Data Streaming, Processing, and Blockchain Security**

Sep 14 2020 Data has cemented itself as a building block of daily life. However, surrounding oneself with great quantities of information heightens risks to one's personal privacy. Additionally, the presence of massive amounts of information prompts researchers into how best to handle and disseminate it. Research is necessary to

5/28

understand how to cope with the current technological requirements. Large-Scale Data Streaming, Processing, and Blockchain Security is a collection of innovative research that explores the latest methodologies, modeling, and simulations for coping with the generation and management of large-scale data in both scientific and individual applications. Featuring coverage on a wide range of topics including security models, internet of things, and collaborative filtering, this book is ideally designed for entrepreneurs, security analysts, IT consultants, security professionals, programmers,

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computer technicians, data scientists, technology developers, engineers, researchers, academicians, and students.

### **Stream Data Management**

Sep 26 2021 Researchers in data management have recently recognized the importance of a new class of data-intensive applications that requires managing data streams, i.e., data composed of continuous, real-time sequence of items. Streaming applications pose new and interesting challenges for data management systems. Such application domains require queries to be evaluated continuously as opposed to the one time evaluation of a query

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for traditional applications. Streaming data sets grow continuously and queries must be evaluated on such unbounded data sets. These, as well as other challenges, require a major rethink of almost all aspects of traditional database management systems to support streaming applications. Stream Data Management comprises eight invited chapters by researchers active in stream data management. The collected chapters provide exposition of algorithms, languages, as well as systems proposed and implemented for managing streaming data. Stream Data Management is designed to appeal to researchers or

practitioners already involved in stream data management, as well as to those starting out in this area. This book is also suitable for graduate students in computer science interested in learning about stream data management.

### **Machine Learning for Data Streams**

Nov 09 2022 A hands-on approach to tasks and techniques in data stream mining and real-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

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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 programmers who want to

7/28

create new algorithms for MOA.

### **Stream Data Processing: A Quality of Service**

**Perspective** May 23 2021 The systems used to process data streams and provide for the needs of stream-based applications are Data Stream Management Systems (DSMSs). This book presents a new paradigm to meet the needs of these applications, including a detailed discussion of the techniques proposed. It includes important aspects of a QoS-driven DSMS (Data Stream Management System) and introduces applications where a DSMS can be used and discusses needs beyond the stream processing model. It

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also discusses in detail the design and implementation of MavStream. This volume is primarily intended as a reference book for researchers and advanced-level students in computer science. It is also appropriate for practitioners in industry who are interested in developing applications.

**Cloud Computing, Security, Privacy in New Computing Environments** Sep 02 2019

This book constitutes the refereed proceedings of the 7th International Conference on Cloud Computing, Security, Privacy in New Computing Environments, CloudComp 2016, and the First EAI International Conference SPNCE 2016, both held in

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Guangzhou, China, in November and December 2016. The proceedings contain 10 full papers selected from 27 submissions and presented at CloudComp 2016 and 12 full papers selected from 69 submissions and presented at SPNCE 2016. CloudComp 2016 presents recent advances and experiences in clouds, cloud computing and related ecosystems and business support. SPNCE 2016 focuses on security and privacy aspects of new computing environments including mobile computing, big data, cloud computing and other large-scale environments.

FPGA to High speed ADC Data streaming Aug 14 2020 Where

8/28

does the content of this book apply? Firstly in research institutes where it is necessary to acquire data in streaming at high speed and low noise especially in the lower part of the spectrum. For example the current machines for the study of nuclear fusion does not produce energy, and their output is substantially a large amount of data. The accuracy of the data collected, and their density within narrow temporal samples, can determine the effectiveness of the real time control systems to install in future reactors. We set ourselves the objective to design and test a high-speed and high-density data acquisition system based on the

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latest generation FPGA technologies. in the book is used the latest products released by Xilinx to design a acquire stream system of signals from generic probes (specifically magnetic probes). The Zynq 7000 family is nowadays state of the art of sistemy SoC that integrating a powerful and extensive FPGA section with an ARM multicore.

### **Optimization and Approximation Techniques for Data Streaming Queries**

Jan 19 2021

#### **Data Stream Load Shedding**

Oct 28 2021 A data stream being transmitted over a network channel with capacity less than the data transmission

rate of the data stream causes sequential network problems. In this book, we present a new approach for shedding less-informative attribute data from a data stream to maintain the data transmission rate less than the network channel capacity. A scheme for shedding attributes, instead of tuples, becomes imperative in stream data, since shedding a complete tuple would lead to shedding some informative, as well as less-informative, attribute data in the tuple. Since data shed at the source site may be of interest to the user at the destination site, we design a data recovery approach, which maintains the minimal amount of information

for data recovery purpose while imposing minimal overhead for data recovery on the source site. Our load shedding and data recovery approach (i) handles wide range of data streams in different application domains, (ii) is dynamic in nature, since each load shedding scheme adjusts the amount of data to be shed according to the current load and network capacity, and (iii) is adoptive, which is appealing in an ever-changing network environment, and (iv) is not based on queries, but works on general data streams instead. The book is addressed to professionals in Digital Telecommunications, Streaming Data, Computer

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Networking, and Databases. It is also directed towards researchers in Data compression, Lossy Data Reduction, and Congestion Control.

Data Streams Aug 06 2022 In the data stream scenario, input arrives very rapidly and there is limited memory to store the input. Algorithms have to work with one or few passes over the data, space less than linear in the input size or time significantly less than the input size. In the past few years, a new theory has emerged for reasoning about algorithms that work within these constraints on space, time, and number of passes. Some of the methods rely on metric

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embeddings, pseudo-random computations, sparse approximation theory and communication complexity. The applications for this scenario include IP network traffic analysis, mining text message streams and processing massive data sets in general. Researchers in Theoretical Computer Science, Databases, IP Networking and Computer Systems are working on the data stream challenges. *Anomaly Detection and Complex Event Processing Over IoT Data Streams* Mar 21 2021 Anomaly Detection and Complex Event Processing over IoT Data Streams: With Application to eHealth and Patient Data Monitoring

10/28

presents advanced processing techniques for IoT data streams and the anomaly detection algorithms over them. The book brings new advances and generalized techniques for processing IoT data streams, semantic data enrichment with contextual information at Edge, Fog and Cloud as well as complex event processing in IoT applications. The book comprises fundamental models, concepts and algorithms, architectures and technological solutions as well as their application to eHealth. Case studies, such as the bio-metric signals stream processing are presented –the massive amount of raw ECG signals from the sensors are processed

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dynamically across the data pipeline and classified with modern machine learning approaches including the Hierarchical Temporal Memory and Deep Learning algorithms. The book discusses adaptive solutions to IoT stream processing that can be extended to different use cases from different fields of eHealth, to enable a complex analysis of patient data in a historical, predictive and even prescriptive application scenarios. The book ends with a discussion on ethics, emerging research trends, issues and challenges of IoT data stream processing. Provides the state-of-the-art in IoT Data Stream Processing,

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Semantic Data Enrichment, Reasoning and Knowledge Covers extraction (Anomaly Detection) Illustrates new, scalable and reliable processing techniques based on IoT stream technologies Offers applications to new, real-time anomaly detection scenarios in the health domain **Spatio-Temporal Data Streams** Nov 28 2021 This SpringerBrief presents the fundamental concepts of a specialized class of data stream, spatio-temporal data streams, and demonstrates their distributed processing using Big Data frameworks and platforms. It explores a consistent framework which facilitates a thorough

11/28

understanding of all different facets of the technology, from basic definitions to state-of-the-art techniques. Key topics include spatio-temporal continuous queries, distributed stream processing, SQL-like language embedding, and trajectory stream clustering. Over the course of the book, the reader will become familiar with spatio-temporal data streams management and data flow processing, which enables the analysis of huge volumes of location-aware continuous data streams. Applications range from mobile object tracking and real-time intelligent transportation systems to traffic monitoring and complex event processing. Spatio-

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Temporal Data Streams is a valuable resource for researchers studying spatio-temporal data streams and Big Data analytics, as well as data engineers and data scientists solving data management and analytics problems associated with this class of data.

*Demand-based Data Stream Gathering, Processing, and Transmission* Jul 25 2021 This book presents an end-to-end architecture for demand-based data stream gathering, processing, and transmission. The Internet of Things (IoT) consists of billions of devices which form a cloud of network connected sensor nodes. These sensor nodes supply a vast number of data streams with

massive amounts of sensor data. Real-time sensor data enables diverse applications including traffic-aware navigation, machine monitoring, and home automation. Current stream processing pipelines are demand-oblivious, which means that they gather, transmit, and process as much data as possible. In contrast, a demand-based processing pipeline uses requirement specifications of data consumers, such as failure tolerances and latency limitations, to save resources. Our solution unifies the way applications express their data demands, i.e., their requirements with respect to

their input streams. This unification allows for multiplexing the data demands of all concurrently running applications. On sensor nodes, we schedule sensor reads based on the data demands of all applications, which saves up to 87% in sensor reads and data transfers in our experiments with real-world sensor data. Our demand-based control layer optimizes the data acquisition from thousands of sensors. We introduce time coherence as a fundamental data characteristic. Time coherence is the delay between the first and the last sensor read that contribute values to a tuple. A large scale parameter exploration shows that our

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solution scales to large numbers of sensors and operates reliably under varying latency and coherence constraints. On stream analysis systems, we tackle the problem of efficient window aggregation. We contribute a general aggregation technique, which adapts to four key workload characteristics: Stream (dis)order, aggregation types, window types, and window measures. Our experiments show that our solution outperforms alternative solutions by an order of magnitude in throughput, which prevents expensive system scale-out. We further derive data demands from visualization needs of

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applications and make these data demands available to streaming systems such as Apache Flink. This enables streaming systems to pre-process data with respect to changing visualization needs. Experiments show that our solution reliably prevents overloads when data rates increase.

Real-Time Analytics Dec 06 2019 Construct a robust end-to-end solution for analyzing and visualizing streaming data Real-time analytics is the hottest topic in data analytics today. In Real-Time Analytics: Techniques to Analyze and Visualize Streaming Data, expert Byron Ellis teaches data analysts technologies to build

13/28

an effective real-time analytics platform. This platform can then be used to make sense of the constantly changing data that is beginning to outpace traditional batch-based analysis platforms. The author is among a very few leading experts in the field. He has a prestigious background in research, development, analytics, real-time visualization, and Big Data streaming and is uniquely qualified to help you explore this revolutionary field. Moving from a description of the overall analytic architecture of real-time analytics to using specific tools to obtain targeted results, Real-Time Analytics leverages open source and modern commercial tools to

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construct robust, efficient systems that can provide real-time analysis in a cost-effective manner. The book includes: A deep discussion of streaming data systems and architectures Instructions for analyzing, storing, and delivering streaming data Tips on aggregating data and working with sets Information on data warehousing options and techniques Real-Time Analytics includes in-depth case studies for website analytics, Big Data, visualizing streaming and mobile data, and mining and visualizing operational data flows. The book's "recipe" layout lets readers quickly learn and implement different techniques. All of the code

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examples presented in the book, along with their related data sets, are available on the companion website.  
Proceedings of the 2nd International Conference on Data Engineering and Communication Technology  
Dec 18 2020 This book features research work presented at the 2nd International Conference on Data Engineering and Communication Technology (ICDECT) held on December 15-16, 2017 at Symbiosis International University, Pune, Maharashtra, India. It discusses advanced, multi-disciplinary research into smart computing, information systems and electronic systems, focusing on innovation

14/28

paradigms in system knowledge, intelligence and sustainability that can be applied to provide feasible solutions to varied problems in society, the environment and industry. It also addresses the deployment of emerging computational and knowledge transfer approaches, optimizing solutions in a variety of disciplines of computer science and electronics engineering.  
**Systems Performance Modeling** May 11 2020 This book describes methods to improve software performance and safety using advanced mathematical and computational analytics. The main focus is laid on the

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increase of software reliability by preventive and predictive maintenance with efficient usage of modern testing resources. The editors collect contributions from international researchers in the field.

**Proceedings. 20. Workshop Computational Intelligence, Dortmund, 1. Dezember - 3. Dezember 2010** Nov 04 2019

Dieser Tagungsband enthält die Beiträge des 20. Workshops "Computational Intelligence" des Fachausschusses 5.14 der VDI/VDE-Gesellschaft für Mess- und Automatisierungstechnik (GMA) der vom 1.-3. Dezember 2010 im Haus Bommerholz (Dortmund) stattfand. Die Schwerpunkte waren

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Methoden, Anwendungen und Tools für- Fuzzy-Systeme, - Künstliche Neuronale Netze, - Evolutionäre Algorithmen und- Data-Mining-Verfahren sowie der Methodenvergleich anhand von industriellen und Benchmark-Problemen.

*PROCESSING & ANALYSING LARGE & COMPLEX DATA STREAMS USING BIG DATA*

Jun 11 2020 The emerging large datasets have made efficient data processing a much more difficult task for the traditional methodologies.

Invariably, datasets continue to increase rapidly in size with time. The purpose of this research is to give an overview of some of the tools and techniques that can be utilized

15/28

to manage and analyze large datasets. We propose a faster way to catalogue and retrieve data by creating a directory file - more specifically, an improved method that would allow file retrieval based on its time and date. This method eliminates the process of searching the entire content of files and reduces the time it takes to locate the selected data. We also implement the nearest search algorithm in an event where the searched query is not found. The algorithm sorts through data to find the closest points that are within close proximity to the searched query. We also offer an efficient data reduction method that effectively

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condenses the amount of data. The algorithm enables users to store the desired amount of data in a file and decrease the time in which observations are retrieved for processing. This is achieved by using a reduced standard deviation range to minimize the original data and keeping the dataset to a significant smaller dataset size.

### **Stream Data Processing: A Quality of Service**

**Perspective** Oct 04 2019 The systems used to process data streams and provide for the needs of stream-based applications are Data Stream Management Systems (DSMSs). This book presents a new paradigm to meet the needs of these applications,

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including a detailed discussion of the techniques proposed. It includes important aspects of a QoS-driven DSMS (Data Stream Management System) and introduces applications where a DSMS can be used and discusses needs beyond the stream processing model. It also discusses in detail the design and implementation of MavStream. This volume is primarily intended as a reference book for researchers and advanced-level students in computer science. It is also appropriate for practitioners in industry who are interested in developing applications.

*An Integrated Approach to Autonomous Computation in Data Streaming Applications*

16/28

Aug 26 2021

*Shaping the Future of ICT* Jul 13 2020 The International Conference on Communications, Management, and Information Technology (ICCMIT'16) provides a discussion forum for scientists, engineers, educators and students about the latest discoveries and realizations in the foundations, theory, models and applications of systems inspired on nature, using computational intelligence methodologies, as well as in emerging areas related to the three tracks of the conference: Communication Engineering, Knowledge, and Information Technology. The best 25 papers to be included in the book will

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be carefully reviewed and selected from numerous submissions, then revised and expanded to provide deeper insight into trends shaping future ICT.

*Learning from Data Streams in Evolving Environments* Dec 30 2021 This edited book covers recent advances of techniques, methods and tools treating the problem of learning from data streams generated by evolving non-stationary processes. The goal is to discuss and overview the advanced techniques, methods and tools that are dedicated to manage, exploit and interpret data streams in non-stationary environments. The book includes the required notions, definitions, and

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background to understand the problem of learning from data streams in non-stationary environments and synthesizes the state-of-the-art in the domain, discussing advanced aspects and concepts and presenting open problems and future challenges in this field. Provides multiple examples to facilitate the understanding data streams in non-stationary environments; Presents several application cases to show how the methods solve different real world problems; Discusses the links between methods to help stimulate new research and application directions.

### **Spatio-Temporal Data**

**Streams** Oct 08 2022 This SpringerBrief presents the

fundamental concepts of a specialized class of data stream, spatio-temporal data streams, and demonstrates their distributed processing using Big Data frameworks and platforms. It explores a consistent framework which facilitates a thorough understanding of all different facets of the technology, from basic definitions to state-of-the-art techniques. Key topics include spatio-temporal continuous queries, distributed stream processing, SQL-like language embedding, and trajectory stream clustering. Over the course of the book, the reader will become familiar with spatio-temporal data streams management and data

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flow processing, which enables the analysis of huge volumes of location-aware continuous data streams. Applications range from mobile object tracking and real-time intelligent transportation systems to traffic monitoring and complex event processing. Spatio-Temporal Data Streams is a valuable resource for researchers studying spatio-temporal data streams and Big Data analytics, as well as data engineers and data scientists solving data management and analytics problems associated with this class of data.

### **Novelty Detection for Multivariate Data Streams with Probabilistic Models**

May 03 2022 The autonomous

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detection of unexpected changes in data is called novelty detection. Multivariate data streams consisting of measurements from multiple sensors often form the basis to detect such changes. Specific examples of such changes are, for instance, cardiac arrhythmias, power failures, storms or network attacks. Accordingly, changes can affect both a system itself and the environment in which it is embedded. This doctoral thesis investigates methods for online novelty detection in multivariate data streams and presents the CANDIES methodology. A unique feature of this method is the explicit separation of the input space of

a probabilistic model into different regions - High-Density Regions (HDR) and Low-Density Regions (LDR) - with detection techniques specifically designed for each. While other detectors can usually only detect novelties or anomalies in LDR, the CANDIES method can also identify novelties in HDR. It also offers possibilities to handle concept drift and noise in data streams. Another distinctive feature of CANDIES is the notion of novelties as an agglomeration of anomalies that have a certain relation to each other (spatially or temporally). Additionally, the focus of this work is also on the experimental evaluation of

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novelty detection algorithms in general. For this purpose, a data generator that can synthesise data streams and novelties is presented, and a new evaluation measure, the FDS, is specifically designed to evaluate novelty detection methods. All methods, algorithms and tools developed and used in this thesis are also publicly and freely available online.

**Research Anthology on Decision Support Systems and Decision Management in Healthcare, Business, and Engineering** Aug 02 2019

Decision support systems (DSS) are widely touted for their effectiveness in aiding decision making, particularly across a

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wide and diverse range of industries including healthcare, business, and engineering applications. The concepts, principles, and theories of enhanced decision making are essential points of research as well as the exact methods, tools, and technologies being implemented in these industries. From both a standpoint of DSS interfaces, namely the design and development of these technologies, along with the implementations, including experiences and utilization of these tools, one can get a better sense of how exactly DSS has changed the face of decision making and management in multi-industry

19/28

applications. Furthermore, the evaluation of the impact of these technologies is essential in moving forward in the future. The Research Anthology on Decision Support Systems and Decision Management in Healthcare, Business, and Engineering explores how decision support systems have been developed and implemented across diverse industries through perspectives on the technology, the utilizations of these tools, and from a decision management standpoint. The chapters will cover not only the interfaces, implementations, and functionality of these tools, but also the overall impacts they have had on the specific

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industries mentioned. This book also evaluates the effectiveness along with benefits and challenges of using DSS as well as the outlook for the future. This book is ideal for decision makers, IT consultants and specialists, software developers, design professionals, academicians, policymakers, researchers, professionals, and students interested in how DSS is being used in different industries.

**Data Stream Mining & Processing** Apr 21 2021 This book constitutes the proceedings of the third International Conference on Data Stream and Mining and Processing, DSMP 2020, held

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in Lviv, Ukraine\*, in August 2020. The 36 full papers presented in this volume were carefully reviewed and selected from 134 submissions. The papers are organized in topical sections of hybrid systems of computational intelligence; machine vision and pattern recognition; dynamic data mining & data stream mining; big data & data science using intelligent approaches. \*The conference was held virtually due to the COVID-19 pandemic.

**Data Stream Management** Sep 07 2022 This volume focuses on the theory and practice of data stream management, and the novel challenges this emerging domain poses for data-

20/28

management algorithms, systems, and applications. The collection of chapters, contributed by authorities in the field, offers a comprehensive introduction to both the algorithmic/theoretical foundations of data streams, as well as the streaming systems and applications built in different domains. A short introductory chapter provides a brief summary of some basic data streaming concepts and models, and discusses the key elements of a generic stream query processing architecture. Subsequently, Part I focuses on basic streaming algorithms for some key analytics functions (e.g., quantiles, norms, join

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aggregates, heavy hitters) over streaming data. Part II then examines important techniques for basic stream mining tasks (e.g., clustering, classification, frequent itemsets). Part III discusses a number of advanced topics on stream processing algorithms, and Part IV focuses on system and language aspects of data stream processing with surveys of influential system prototypes and language designs. Part V then presents some representative applications of streaming techniques in different domains (e.g., network management, financial analytics). Finally, the volume concludes with an overview of current data streaming

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products and new application domains (e.g. cloud computing, big data analytics, and complex event processing), and a discussion of future directions in this exciting field. The book provides a comprehensive overview of core concepts and technological foundations, as well as various systems and applications, and is of particular interest to students, lecturers and researchers in the area of data stream management.

### **Data Stream Management**

Apr 02 2022 Many applications process high volumes of streaming data, among them Internet traffic analysis, financial tickers, and transaction log mining. In

21/28

general, a data stream is an unbounded data set that is produced incrementally over time, rather than being available in full before its processing begins. In this lecture, we give an overview of recent research in stream processing, ranging from answering simple queries on high-speed streams to loading real-time data feeds into a streaming warehouse for off-line analysis. We will discuss two types of systems for end-to-end stream processing: Data Stream Management Systems (DSMSs) and Streaming Data Warehouses (SDWs). A traditional database management system typically processes a stream of ad-hoc

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queries over relatively static data. In contrast, a DSMS evaluates static (long-running) queries on streaming data, making a single pass over the data and using limited working memory. In the first part of this lecture, we will discuss research problems in DSMSs, such as continuous query languages, non-blocking query operators that continually react to new data, and continuous query optimization. The second part covers SDWs, which combine the real-time response of a DSMS by loading new data as soon as they arrive with a data warehouse's ability to manage Terabytes of historical data on secondary storage. Table of Contents: Introduction

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/ Data Stream Management Systems / Streaming Data Warehouses / Conclusions  
**Proceedings 2004 VLDB Conference** Feb 06 2020  
Proceedings of the 30th Annual International Conference on Very Large Data Bases held in Toronto, Canada on August 31 - September 3 2004. Organized by the VLDB Endowment, VLDB is the premier international conference on database technology.  
Information Security Apr 09 2020 This book constitutes the refereed proceedings of the 9th International Conference on Information Security, ISC 2006, held on Samos Island, Greece in August/September 2006. The 38 revised full papers

22/28

presented were carefully reviewed and selected from 188 submissions. The papers are organized in topical sections.

**Data Streams** Jul 05 2022 This book primarily discusses issues related to the mining aspects of data streams and it is unique in its primary focus on the subject. This volume covers mining aspects of data streams comprehensively: each contributed chapter contains a survey on the topic, the key ideas in the field for that particular topic, and future research directions. The book is intended for a professional audience composed of researchers and practitioners in industry. This book is also

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appropriate for advanced-level students in computer science. [Bio-inspired Algorithms for Data Streaming and Visualization, Big Data Management, and Fog Computing](#) Jun 23 2021 This book aims to provide some insights into recently developed bio-inspired algorithms within recent emerging trends of fog computing, sentiment analysis, and data streaming as well as to provide a more comprehensive approach to the big data management from pre-processing to analytics to visualization phases. The subject area of this book is within the realm of computer science, notably algorithms

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(meta-heuristic and, more particularly, bio-inspired algorithms). Although application domains of these new algorithms may be mentioned, the scope of this book is not on the application of algorithms to specific or general domains but to provide an update on recent research trends for bio-inspired algorithms within a specific application domain or emerging area. These areas include data streaming, fog computing, and phases of big data management. One of the reasons for writing this book is that the bio-inspired approach does not receive much attention but shows considerable promise and

23/28

diversity in terms of approach of many issues in big data and streaming. Some novel approaches of this book are the use of these algorithms to all phases of data management (not just a particular phase such as data mining or business intelligence as many books focus on); effective demonstration of the effectiveness of a selected algorithm within a chapter against comparative algorithms using the experimental method. Another novel approach is a brief overview and evaluation of traditional algorithms, both sequential and parallel, for use in data mining, in order to provide an overview of existing algorithms in use. This

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overview complements a further chapter on bio-inspired algorithms for data mining to enable readers to make a more suitable choice of algorithm for data mining within a particular context. In all chapters, references for further reading are provided, and in selected chapters, the author also include ideas for future research.

### **Geo-Informatics in Resource Management and**

### **Sustainable Ecosystem** Jan

07 2020 This volume constitutes the refereed proceedings of the Second International Conference on Geo-Informatics in Resource Management and Sustainable Ecosystem, GRMSE 2014, held

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in Ypsilanti, MI, China, in December 2014. The 73 papers presented were carefully reviewed and selected from 296 submissions. The papers are divided into topical sections on smart city in resource management and sustainable ecosystem; spatial data acquisition through RS and GIS in resource management and sustainable ecosystem; ecological and environmental data processing and management; advanced geospatial model and analysis for understanding ecological and environmental process; applications of geo-informatics in resource management and sustainable ecosystem.

### **Kafka Streams in Action** Mar

09 2020 Summary Kafka Streams in Action teaches you everything you need to know to implement stream processing on data flowing into your Kafka platform, allowing you to focus on getting more from your data without sacrificing time or effort. Foreword by Neha Narkhede, Cocreator of Apache Kafka Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Not all stream-based applications require a dedicated processing cluster. The lightweight Kafka Streams library provides exactly the power and simplicity you need for message handling in

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microservices and real-time event processing. With the Kafka Streams API, you filter and transform data streams with just Kafka and your application. About the Book Kafka Streams in Action teaches you to implement stream processing within the Kafka platform. In this easy-to-follow book, you'll explore real-world examples to collect, transform, and aggregate data, work with multiple processors, and handle real-time events. You'll even dive into streaming SQL with KSQL! Practical to the very end, it finishes with testing and operational aspects, such as monitoring and debugging. What's inside Using the KStreams API

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Filtering, transforming, and splitting data Working with the Processor API Integrating with external systems About the Reader Assumes some experience with distributed systems. No knowledge of Kafka or streaming applications required. About the Author Bill Bejeck is a Kafka Streams contributor and Confluent engineer with over 15 years of software development experience. Table of Contents PART 1 - GETTING STARTED WITH KAFKA STREAMS Welcome to Kafka Streams Kafka quicklyPART 2 - KAFKA STREAMS DEVELOPMENT Developing Kafka Streams Streams and state The KTable API The

25/28

Processor APIPART 3 - ADMINISTERING KAFKA STREAMS Monitoring and performance Testing a Kafka Streams applicationPART 4 - ADVANCED CONCEPTS WITH KAFKA STREAMS Advanced applications with Kafka StreamsAPPENDIXES Appendix A - Additional configuration information Appendix B - Exactly once semantics Sentiment Analysis and Knowledge Discovery in Contemporary Business Oct 16 2020 In the era of social connectedness, people are becoming increasingly enthusiastic about interacting, sharing, and collaborating through online collaborative

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media. However, conducting sentiment analysis on these platforms can be challenging, especially for business professionals who are using them to collect vital data. Sentiment Analysis and Knowledge Discovery in Contemporary Business is an essential reference source that discusses applications of sentiment analysis as well as data mining, machine learning algorithms, and big data streams in business environments. Featuring research on topics such as knowledge retrieval and knowledge updating, this book is ideally designed for business managers, academicians, business professionals,

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researchers, graduate-level students, and technology developers seeking current research on data collection and management to drive profit. *Scalable Data Streaming with Amazon Kinesis* Feb 17 2021 Explore Kinesis managed services such as Kinesis Data Streams, Kinesis Data Analytics, Kinesis Data Firehose, and Kinesis Video Streams with the help of practical use cases Key Features Get well versed with the capabilities of Amazon Kinesis Explore the monitoring, scaling, security, and deployment patterns of various Amazon Kinesis services Learn how other Amazon Web Services and third-party

26/28

applications such as Splunk can be used as destinations for Kinesis dataBook Description Amazon Kinesis is a collection of secure, serverless, durable, and highly available purpose-built data streaming services. This data streaming service provides APIs and client SDKs that enable you to produce and consume data at scale. Scalable Data Streaming with Amazon Kinesis begins with a quick overview of the core concepts of data streams, along with the essentials of the AWS Kinesis landscape. You'll then explore the requirements of the use case shown through the book to help you get started and cover the key pain points encountered in the data stream

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life cycle. As you advance, you'll get to grips with the architectural components of Kinesis, understand how they are configured to build data pipelines, and delve into the applications that connect to them for consumption and processing. You'll also build a Kinesis data pipeline from scratch and learn how to implement and apply practical solutions. Moving on, you'll learn how to configure Kinesis on a cloud platform. Finally, you'll learn how other AWS services can be integrated into Kinesis. These services include Redshift, Dynamo Database, AWS S3, Elastic Search, and third-party applications such as Splunk. By the end of this AWS

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book, you'll be able to build and deploy your own Kinesis data pipelines with Kinesis Data Streams (KDS), Kinesis Data Firehose (KFH), Kinesis Video Streams (KVS), and Kinesis Data Analytics (KDA). What you will learnGet to grips with data streams, decoupled design, and real-time stream processingUnderstand the properties of KFH that differentiate it from other Kinesis servicesMonitor and scale KDS using CloudWatch metricsSecure KDA with identity and access management (IAM)Deploy KVS as infrastructure as code (IaC)Integrate services such as Redshift, Dynamo Database, and Splunk into KinesisWho

27/28

this book is for This book is for solutions architects, developers, system administrators, data engineers, and data scientists looking to evaluate and choose the most performant, secure, scalable, and cost-effective data streaming technology to overcome their data ingestion and processing challenges on AWS. Prior knowledge of cloud architectures on AWS, data streaming technologies, and architectures is expected.

### **Learning from Data Streams**

Jun 04 2022 Processing data streams has raised new research challenges over the last few years. This book provides the reader with a comprehensive overview of

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stream data processing, including famous prototype implementations like the Nile system and the TinyOS

operating system. Applications in security, the natural sciences, and education are

presented. The huge bibliography offers an excellent starting point for further reading and future research.