

Active Learning For Hierarchical Text Classification

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[Advances in Knowledge Discovery and Data Mining, Part II](#) - Pang-Ning Tan 2012-05-10

The two-volume set LNAI 7301 and 7302 constitutes the refereed proceedings of the 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2012, held in Kuala Lumpur, Malaysia, in May 2012. The total of 20 revised full papers and 66 revised short papers were carefully reviewed and selected from 241 submissions. The papers present new ideas, original research results, and practical development experiences from all KDD-related areas. The papers are organized in topical sections on supervised learning: active, ensemble, rare-class and online; unsupervised learning: clustering, probabilistic modeling in the first volume and on pattern mining: networks, graphs, time-series and outlier detection, and data manipulation: pre-processing and dimension reduction in the second volume.

Machine Learning: ECML 2005 - João Gama 2005-09-22

This book constitutes the refereed proceedings of the 16th European Conference on Machine Learning, ECML 2005, jointly held with PKDD 2005 in Porto, Portugal, in October 2005. The 40 revised full papers and 32 revised short papers presented together with abstracts of 6 invited talks were carefully reviewed and selected from 335 papers submitted to ECML and 30 papers submitted to both, ECML and PKDD. The papers

present a wealth of new results in the area and address all current issues in machine learning.

Hybrid Artificial Intelligent Systems - Hilde Pérez García 2019-08-26

This volume constitutes the refereed proceedings of the 14th International Conference on Hybrid Artificial Intelligent Systems, HAIS 2019, held in León, Spain, in September 2019. The 64 full papers published in this volume were carefully reviewed and selected from 134 submissions. They are organized in the following topical sections: data mining, knowledge discovery and big data; bio-inspired models and evolutionary computation; learning algorithms; visual analysis and advanced data processing techniques; data mining applications; and hybrid intelligent applications.

Neural Information Processing - Derong Liu 2017-11-07

The six volume set LNCS 10634, LNCS 10635, LNCS 10636, LNCS 10637, LNCS 10638, and LNCS 10639 constitutes the proceedings of the 24th International Conference on Neural Information Processing, ICONIP 2017, held in Guangzhou, China, in November 2017. The 563 full papers presented were carefully reviewed and selected from 856 submissions. The 6 volumes are organized in topical sections on Machine Learning, Reinforcement Learning, Big Data Analysis, Deep Learning, Brain-Computer Interface, Computational Finance, Computer Vision,

Neurodynamics, Sensory Perception and Decision Making, Computational Intelligence, Neural Data Analysis, Biomedical Engineering, Emotion and Bayesian Networks, Data Mining, Time-Series Analysis, Social Networks, Bioinformatics, Information Security and Social Cognition, Robotics and Control, Pattern Recognition, Neuromorphic Hardware and Speech Processing.

Advances in Knowledge Discovery and Data Mining - Jian Pei 2013-04-05

The two-volume set LNAI 7818 + LNAI 7819 constitutes the refereed proceedings of the 17th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2013, held in Gold Coast, Australia, in April 2013. The total of 98 papers presented in these proceedings was carefully reviewed and selected from 363 submissions. They cover the general fields of data mining and KDD extensively, including pattern mining, classification, graph mining, applications, machine learning, feature selection and dimensionality reduction, multiple information sources mining, social networks, clustering, text mining, text classification, imbalanced data, privacy-preserving data mining, recommendation, multimedia data mining, stream data mining, data preprocessing and representation.

Kernel Methods and Machine Learning - S. Y. Kung 2014-04-17

Offering a fundamental basis in kernel-based learning theory, this book covers both statistical and algebraic principles. It provides over 30 major theorems for kernel-based supervised and unsupervised learning models. The first of the theorems establishes a condition, arguably necessary and sufficient, for the kernelization of learning models. In addition, several other theorems are devoted to proving mathematical equivalence between seemingly unrelated models. With over 25 closed-form and iterative algorithms, the book provides a step-by-step guide to algorithmic procedures and analysing which factors to consider in tackling a given problem, enabling readers to improve specifically designed learning algorithms, build models for new applications and develop efficient techniques suitable for green machine learning technologies. Numerous real-world examples and over 200 problems, several of which are Matlab-based simulation exercises, make this an

essential resource for graduate students and professionals in computer science, electrical and biomedical engineering. Solutions to problems are provided online for instructors.

Inductive Inference for Large Scale Text Classification - Catarina Silva 2009-11-24

Text classification is becoming a crucial task to analysts in different areas. In the last few decades, the production of textual documents in digital form has increased exponentially. Their applications range from web pages to scientific documents, including emails, news and books. Despite the widespread use of digital texts, handling them is inherently difficult - the large amount of data necessary to represent them and the subjectivity of classification complicate matters. This book gives a concise view on how to use kernel approaches for inductive inference in large scale text classification; it presents a series of new techniques to enhance, scale and distribute text classification tasks. It is not intended to be a comprehensive survey of the state-of-the-art of the whole field of text classification. Its purpose is less ambitious and more practical: to explain and illustrate some of the important methods used in this field, in particular kernel approaches and techniques.

Mining and Analyzing Social Networks - I-Hsien Ting 2010-05-29

Mining social networks has now becoming a very popular research area not only for data mining and web mining but also social network analysis. Data mining is a technique that has the ability to process and analyze large amount of data and by this to discover valuable information from the data. In recent year, due to the growth of social communications and social networking websites, data mining becomes a very important and powerful technique to process and analyze such large amount of data. Thus, this book will focus upon Mining and Analyzing social network. Some chapters in this book are extended from the papers that presented in MSNDS2009 (the First International Workshop on Mining Social Networks for Decision Support) and SNMABA2009 ((The International Workshop on Social Networks Mining and Analysis for Business Applications)). In addition, we also sent invitations to researchers that are famous in this research area to contribute for this book. The chapters

of this book are introduced as follows: In chapter 1-Graph Model for Pattern Recognition in Text, Qin Wu et al. present a novel approach that uses a weighted directed multigraph for text pattern recognition. In the proposed methodology, a weighted directed multigraph model has been set up by using the distances between the keywords as the weights of arcs as well a keyword-frequency distance based algorithm has also been introduced. Case studies are also included in this chapter to show the performance is better than traditional means.

Professional Search in the Modern World - Georgios Paltoglou
2014-10-23

This State-of-the-Art Survey constitutes the Final Publication of the COST Action IC1002 on Multilingual and Multifaceted Interactive Information Access, MUMIA. It contains outstanding research, recent developments and new directions in all related aspects of multifaceted and interactive information access with a focus on professional and enterprise search. The contributions are grouped in the following three parts: frameworks, models and theory; tools, applications and practice; and patent search. The Intellectual Property (IP) domain is used through the book as a primary case study. The book aims to bring together material which has been published in a fragmentary way in journals and conference papers into a coherent whole but also present novel, unpublished work where appropriate.

Discovery Science - Tapio Elomaa 2011-09-23

This book constitutes the refereed proceedings of the 14th International Conference on Discovery Science, DS 2011, held in Espoo, Finland, in October 2011 - co-located with ALT 2011, the 22nd International Conference on Algorithmic Learning Theory. The 24 revised full papers presented together with 5 invited lectures were carefully revised and selected from 56 submissions. The papers cover a wide range including the development and analysis of methods for automatic scientific knowledge discovery, machine learning, intelligent data analysis, theory of learning, as well as their application to knowledge discovery.

Data Classification - Charu C. Aggarwal 2014-07-25

Comprehensive Coverage of the Entire Area of Classification Research

on the problem of classification tends to be fragmented across such areas as pattern recognition, database, data mining, and machine learning. Addressing the work of these different communities in a unified way, *Data Classification: Algorithms and Applications* explores the underlying algorithms of classification as well as applications of classification in a variety of problem domains, including text, multimedia, social network, and biological data. This comprehensive book focuses on three primary aspects of data classification: Methods-The book first describes common techniques used for classification, including probabilistic methods, decision trees, rule-based methods, instance-based methods, support vector machine methods, and neural networks. Domains-The book then examines specific methods used for data domains such as multimedia, text, time-series, network, discrete sequence, and uncertain data. It also covers large data sets and data streams due to the recent importance of the big data paradigm. Variations-The book concludes with insight on variations of the classification process. It discusses ensembles, rare-class learning, distance function learning, active learning, visual learning, transfer learning, and semi-supervised learning as well as evaluation aspects of classifiers.

Data Preprocessing, Active Learning, and Cost Perceptive Approaches for Resolving Data Imbalance - Rana, Dipti P. 2021-06-04

Over the last two decades, researchers are looking at imbalanced data learning as a prominent research area. Many critical real-world application areas like finance, health, network, news, online advertisement, social network media, and weather have imbalanced data, which emphasizes the research necessity for real-time implications of precise fraud/default detection, rare disease/reaction prediction, network intrusion detection, fake news detection, fraud advertisement detection, cyber bullying identification, disaster events prediction, and more. Machine learning algorithms are based on the heuristic of equally-distributed balanced data and provide the biased result towards the majority data class, which is not acceptable considering imbalanced data is omnipresent in real-life scenarios and is forcing us to learn from

imbalanced data for foolproof application design. Imbalanced data is multifaceted and demands a new perception using the novelty at sampling approach of data preprocessing, an active learning approach, and a cost perceptive approach to resolve data imbalance. Data Preprocessing, Active Learning, and Cost Perceptive Approaches for Resolving Data Imbalance offers new aspects for imbalanced data learning by providing the advancements of the traditional methods, with respect to big data, through case studies and research from experts in academia, engineering, and industry. The chapters provide theoretical frameworks and the latest empirical research findings that help to improve the understanding of the impact of imbalanced data and its resolving techniques based on data preprocessing, active learning, and cost perceptive approaches. This book is ideal for data scientists, data analysts, engineers, practitioners, researchers, academicians, and students looking for more information on imbalanced data characteristics and solutions using varied approaches.

[Archives, Access and Artificial Intelligence](#) - Lise Jaillant 2022-04-30
Digital archives are transforming the Humanities and the Sciences. Digitized collections of newspapers and books have pushed scholars to develop new, data-rich methods. Born-digital archives are now better preserved and managed thanks to the development of open-access and commercial software. Digital Humanities have moved from the fringe to the center of academia. Yet, the path from the appraisal of records to their analysis is far from smooth. This book explores crossovers between various disciplines to improve the discoverability, accessibility, and use of born-digital archives and other cultural assets.

Artificial Intelligence - Lu Fang 2022-01-01
This two-volume set LNCS 13069-13070 constitutes selected papers presented at the First CAAI International Conference on Artificial Intelligence, held in Hangzhou, China, in June 2021. Due to the COVID-19 pandemic the conference was partially held online. The 105 papers were thoroughly reviewed and selected from 307 qualified submissions. The papers are organized in topical sections on applications of AI; computer vision; data mining; explainability, understandability,

and verifiability of AI; machine learning; natural language processing; robotics; and other AI related topics.

Advances in Chance Discovery - Yukio Ohsawa 2012-08-01
Since year 2000, scientists on artificial and natural intelligences started to study chance discovery - methods for discovering events/situations that significantly affect decision making. Partially because the editors Ohsawa and Abe are teaching at schools of Engineering and of Literature with sharing the interest in chance discovery, this book reflects interdisciplinary aspects of progress: First, as an interdisciplinary melting pot of cognitive science, computational intelligence, data mining/visualization, collective intelligence, ... etc, chance discovery came to reach new application domains e.g. health care, aircraft control, energy plant, management of technologies, product designs, innovations, marketing, finance etc. Second, basic technologies and sciences including sensor technologies, medical sciences, communication technologies etc. joined this field and interacted with cognitive/computational scientists in workshops on chance discovery, to obtain breakthroughs by stimulating each other. Third, "time" came to be introduced explicitly as a significant variable ruling causalities - background situations causing chances and chances causing impacts on events and actions of humans in the future. Readers may urge us to list the fourth, fifth, sixth, ... but let us stop here and open this book.

Practical Natural Language Processing - Sowmya Vajjala 2020-06-17
Many books and courses tackle natural language processing (NLP) problems with toy use cases and well-defined datasets. But if you want to build, iterate, and scale NLP systems in a business setting and tailor them for particular industry verticals, this is your guide. Software engineers and data scientists will learn how to navigate the maze of options available at each step of the journey. Through the course of the book, authors Sowmya Vajjala, Bodhisattwa Majumder, Anuj Gupta, and Harshit Surana will guide you through the process of building real-world NLP solutions embedded in larger product setups. You'll learn how to adapt your solutions for different industry verticals such as healthcare, social media, and retail. With this book, you'll: Understand the wide

spectrum of problem statements, tasks, and solution approaches within NLP Implement and evaluate different NLP applications using machine learning and deep learning methods Fine-tune your NLP solution based on your business problem and industry vertical Evaluate various algorithms and approaches for NLP product tasks, datasets, and stages Produce software solutions following best practices around release, deployment, and DevOps for NLP systems Understand best practices, opportunities, and the roadmap for NLP from a business and product leader's perspective

Natural Language Processing and Information Systems - Max Silberztein 2018-05-24

This book constitutes the refereed proceedings of the 23rd International Conference on Applications of Natural Language to Information Systems, NLDB 2018, held in Paris, France, in June 2018. The 18 full papers, 26 short papers, and 9 poster papers presented were carefully reviewed and selected from 99 submissions. The papers are organized in the following topical sections: Opinion Mining and Sentiment Analysis in Social Media; Semantics-Based Models and Applications; Neural Networks Based Approaches; Ontology Engineering; NLP; Text Similarities and Plagiarism Detection; Text Classification; Information Mining; Recommendation Systems; Translation and Foreign Language Querying; Software Requirement and Checking.

Document Analysis and Recognition - ICDAR 2021 - Josep Lladós 2021-09-04

This four-volume set of LNCS 12821, LNCS 12822, LNCS 12823 and LNCS 12824, constitutes the refereed proceedings of the 16th International Conference on Document Analysis and Recognition, ICDAR 2021, held in Lausanne, Switzerland in September 2021. The 182 full papers were carefully reviewed and selected from 340 submissions, and are presented with 13 competition reports. The papers are organized into the following topical sections: historical document analysis, document analysis systems, handwriting recognition, scene text detection and recognition, document image processing, natural language processing (NLP) for document understanding, and graphics, diagram and math

recognition.

Discovery Science - Carlos Soares 2021

This book constitutes the proceedings of the 24th International Conference on Discovery Science, DS 2021, which took place virtually during October 11-13, 2021. The 36 papers presented in this volume were carefully reviewed and selected from 76 submissions. The contributions were organized in topical sections named: applications; classification; data streams; graph and network mining; machine learning for COVID-19; neural networks and deep learning; preferences and recommender systems; representation learning and feature selection; responsible artificial intelligence; and spatial, temporal and spatiotemporal data.

Computer Vision - ECCV 2020 - Andrea Vedaldi 2020-11-06

The 30-volume set, comprising the LNCS books 12346 until 12375, constitutes the refereed proceedings of the 16th European Conference on Computer Vision, ECCV 2020, which was planned to be held in Glasgow, UK, during August 23-28, 2020. The conference was held virtually due to the COVID-19 pandemic. The 1360 revised papers presented in these proceedings were carefully reviewed and selected from a total of 5025 submissions. The papers deal with topics such as computer vision; machine learning; deep neural networks; reinforcement learning; object recognition; image classification; image processing; object detection; semantic segmentation; human pose estimation; 3d reconstruction; stereo vision; computational photography; neural networks; image coding; image reconstruction; object recognition; motion estimation.

Multi-disciplinary Trends in Artificial Intelligence - Manasawee Kaenampornpan 2018-11-09

This book constitutes the refereed conference proceedings of the 12th International Conference on Multi-disciplinary Trends in Artificial Intelligence, MIWAI 2018, held in Hanoi, Vietnam, in November 2018. The 16 full papers presented together with 9 short papers were carefully reviewed and selected from 65 submissions. They are organized in the following topical sections: control, planning and scheduling, pattern

recognition, knowledge mining, software applications, strategy games and others.

Intelligent Systems and Applications - Kohei Arai 2020-08-25

The book *Intelligent Systems and Applications - Proceedings of the 2020 Intelligent Systems Conference* is a remarkable collection of chapters covering a wider range of topics in areas of intelligent systems and artificial intelligence and their applications to the real world. The Conference attracted a total of 545 submissions from many academic pioneering researchers, scientists, industrial engineers, students from all around the world. These submissions underwent a double-blind peer review process. Of those 545 submissions, 177 submissions have been selected to be included in these proceedings. As intelligent systems continue to replace and sometimes outperform human intelligence in decision-making processes, they have enabled a larger number of problems to be tackled more effectively. This branching out of computational intelligence in several directions and use of intelligent systems in everyday applications have created the need for such an international conference which serves as a venue to report on up-to-the-minute innovations and developments. This book collects both theory and application based chapters on all aspects of artificial intelligence, from classical to intelligent scope. We hope that readers find the volume interesting and valuable; it provides the state of the art intelligent methods and techniques for solving real world problems along with a vision of the future research.

Advanced Topics in Computer Vision - Giovanni Maria Farinella 2013-09-24

This book presents a broad selection of cutting-edge research, covering both theoretical and practical aspects of reconstruction, registration, and recognition. The text provides an overview of challenging areas and descriptions of novel algorithms. Features: investigates visual features, trajectory features, and stereo matching; reviews the main challenges of semi-supervised object recognition, and a novel method for human action categorization; presents a framework for the visual localization of MAVs, and for the use of moment constraints in convex shape optimization;

examines solutions to the co-recognition problem, and distance-based classifiers for large-scale image classification; describes how the four-color theorem can be used for solving MRF problems; introduces a Bayesian generative model for understanding indoor environments, and a boosting approach for generalizing the k-NN rule; discusses the issue of scene-specific object detection, and an approach for making temporal super resolution video.

Advanced Information Networking and Applications - Leonard Barolli 2021-04-26

This book covers the theory, design and applications of computer networks, distributed computing and information systems. Networks of today are going through a rapid evolution, and there are many emerging areas of information networking and their applications. Heterogeneous networking supported by recent technological advances in low-power wireless communications along with silicon integration of various functionalities such as sensing, communications, intelligence and actuations is emerging as a critically important disruptive computer class based on a new platform, networking structure and interface that enable novel, low-cost and high-volume applications. Several of such applications have been difficult to realize because of many interconnections problems. To fulfill their large range of applications, different kinds of networks need to collaborate, and wired and next-generation wireless systems should be integrated in order to develop high-performance computing solutions to problems arising from the complexities of these networks. The aim of the book "Advanced Information Networking and Applications" is to provide latest research findings, innovative research results, methods and development techniques from both theoretical and practical perspectives related to the emerging areas of information networking and applications.

Information Retrieval Technology - Hang Li 2008-05-29

AsiaInformationRetrievalSymposium(AIRS)2008wasthefourthAIRSconference in the series established in 2004. The first AIRS was held in Beijing, China, the second in Jeju, Korea, and the third in Singapore. The AIRS conferences trace their roots to the successful Information Retrieval with

Asian Languages (IRAL) workshops, which started in 1996. The AIRS series aims to bring together international researchers and developers to exchange new ideas and the latest results in information retrieval. The scope of the conference encompasses the theory and practice of all aspects of information retrieval in text, audio, image, video, and multimedia data. We are pleased to report that AIRS 2006 received a large number of 144 submissions. Submissions came from all continents: Asia, Europe, North America, South America and Africa. We accepted 39 submissions as regular papers (27%) and 45 as short papers (31%). All submissions underwent double-blind reviewing. We are grateful to all the area Co-chairs who managed the review process of their respective area efficiently, as well as to all the Program Committee members and additional reviewers for their efforts to get reviews in on time despite the tight time schedule. We are pleased that the proceedings are published by Springer as part of their Lecture Notes in Computer Science (LNCS) series and that the papers are EI-indexed.

Proceedings of the Fourth SIAM International Conference on Data Mining - Michael W. Berry 2004-01-01

The Fourth SIAM International Conference on Data Mining continues the tradition of providing an open forum for the presentation and discussion of innovative algorithms as well as novel applications of data mining. This is reflected in the talks by the four keynote speakers who discuss data usability issues in systems for data mining in science and engineering, issues raised by new technologies that generate biological data, ways to find complex structured patterns in linked data, and advances in Bayesian inference techniques. This proceedings includes 61 research papers.

Advances in Parallel & Distributed Processing, and Applications - Hamid R. Arabnia 2021-10-18

The book presents the proceedings of four conferences: The 26th International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'20), The 18th International Conference on Scientific Computing (CSC'20); The 17th International Conference on Modeling, Simulation and Visualization Methods

(MSV'20); and The 16th International Conference on Grid, Cloud, and Cluster Computing (GCC'20). The conferences took place in Las Vegas, NV, USA, July 27-30, 2020. The conferences are part of the larger 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing (CSCE'20), which features 20 major tracks. Authors include academics, researchers, professionals, and students. Presents the proceedings of four conferences as part of the 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing (CSCE'20); Includes the research tracks Parallel and Distributed Processing, Scientific Computing, Modeling, Simulation and Visualization, and Grid, Cloud, and Cluster Computing; Features papers from PDPTA'20, CSC'20, MSV'20, and GCC'20.

Machine Learning and Knowledge Discovery in Databases, Part III - Dimitrios Gunopulos 2011-09-06

This three-volume set LNAI 6911, LNAI 6912, and LNAI 6913 constitutes the refereed proceedings of the European conference on Machine Learning and Knowledge Discovery in Databases: ECML PKDD 2011, held in Athens, Greece, in September 2011. The 121 revised full papers presented together with 10 invited talks and 11 demos in the three volumes, were carefully reviewed and selected from about 600 paper submissions. The papers address all areas related to machine learning and knowledge discovery in databases as well as other innovative application domains such as supervised and unsupervised learning with some innovative contributions in fundamental issues; dimensionality reduction, distance and similarity learning, model learning and matrix/tensor analysis; graph mining, graphical models, hidden markov models, kernel methods, active and ensemble learning, semi-supervised and transductive learning, mining sparse representations, model learning, inductive logic programming, and statistical learning. a significant part of the papers covers novel and timely applications of data mining and machine learning in industrial domains.

The Text Mining Handbook - Ronen Feldman 2007

Publisher description

Emerging Technologies of Text Mining: Techniques and Applications - do

Prado, Hercules Antonio 2007-10-31

"This book provides the most recent technical information related to the computational models of the text mining process, discussing techniques within the realms of classification, association analysis, information extraction, and clustering. Offering an innovative approach to the utilization of textual information mining to maximize competitive advantage, it will provide libraries with the defining reference on this topic"--Provided by publisher.

Neural Information Processing - Minho Lee 2009-11-24

The two volumes LNCS 5863 and 5864 constitute the proceedings of the 16th International Conference on Neural Information Processing, ICONIP 2009, held in Bangkok, Thailand, in December 2009. The 145 regular session papers and 53 special session papers presented were carefully reviewed and selected from 466 submissions. The papers are structured in topical sections on cognitive science and computational neuroscience, neurodynamics, mathematical modeling and analysis, kernel and related methods, learning algorithms, pattern analysis, face analysis and processing, image processing, financial applications, computer vision, control and robotics, evolutionary computation, other emerging computational methods, signal, data and text processing, artificial spiking neural systems: nonlinear dynamics and engineering applications, towards brain-inspired systems, computational advances in bioinformatics, data mining for cybersecurity, evolutionary neural networks: theory and practice, hybrid and adaptive systems for computer vision and robot control, intelligent data mining, neural networks for data mining, and SOM and related subjects and its applications.

Applied Soft Computing Technologies: The Challenge of Complexity - Ajith Abraham 2006-08-11

This volume presents the proceedings of the 9th Online World Conference on Soft Computing in Industrial Applications, held on the World Wide Web in 2004. It includes lectures, original papers and tutorials presented during the conference. The book brings together outstanding research and developments in soft computing, including evolutionary computation, fuzzy logic, neural networks, and their fusion,

and its applications in science and technology.

Active Learning - Burr Settles 2012-07-01

The key idea behind active learning is that a machine learning algorithm can perform better with less training if it is allowed to choose the data from which it learns. An active learner may pose "queries," usually in the form of unlabeled data instances to be labeled by an "oracle" (e.g., a human annotator) that already understands the nature of the problem. This sort of approach is well-motivated in many modern machine learning and data mining applications, where unlabeled data may be abundant or easy to come by, but training labels are difficult, time-consuming, or expensive to obtain. This book is a general introduction to active learning. It outlines several scenarios in which queries might be formulated, and details many query selection algorithms which have been organized into four broad categories, or "query selection frameworks." We also touch on some of the theoretical foundations of active learning, and conclude with an overview of the strengths and weaknesses of these approaches in practice, including a summary of ongoing work to address these open challenges and opportunities. Table of Contents: Automating Inquiry / Uncertainty Sampling / Searching Through the Hypothesis Space / Minimizing Expected Error and Variance / Exploiting Structure in Data / Theory / Practical Considerations

Encyclopedia of Data Warehousing and Mining - Wang, John 2005-06-30

Data Warehousing and Mining (DWM) is the science of managing and analyzing large datasets and discovering novel patterns and in recent years has emerged as a particularly exciting and industrially relevant area of research. Prodigious amounts of data are now being generated in domains as diverse as market research, functional genomics and pharmaceuticals; intelligently analyzing these data, with the aim of answering crucial questions and helping make informed decisions, is the challenge that lies ahead. The Encyclopedia of Data Warehousing and Mining provides a comprehensive, critical and descriptive examination of concepts, issues, trends, and challenges in this rapidly expanding field of data warehousing and mining (DWM). This encyclopedia consists of more

than 350 contributors from 32 countries, 1,800 terms and definitions, and more than 4,400 references. This authoritative publication offers in-depth coverage of evolutions, theories, methodologies, functionalities, and applications of DWM in such interdisciplinary industries as healthcare informatics, artificial intelligence, financial modeling, and applied statistics, making it a single source of knowledge and latest discoveries in the field of DWM.

Chinese Computational Linguistics - Maosong Sun 2019-10-14

This book constitutes the proceedings of the 18th China National Conference on Computational Linguistics, CCL 2019, held in Kunming, China, in October 2019. The 56 full papers presented in this volume were carefully reviewed and selected from 134 submissions. They were organized in topical sections named: linguistics and cognitive science, fundamental theory and methods of computational linguistics, information retrieval and question answering, text classification and summarization, knowledge graph and information extraction, machine translation and multilingual information processing, minority language processing, language resource and evaluation, social computing and sentiment analysis, NLP applications.

Intelligent Data Mining and Fusion Systems in Agriculture -

Xanthoula Eirini Pantazi 2019-10-08

Intelligent Data Mining and Fusion Systems in Agriculture presents methods of computational intelligence and data fusion that have applications in agriculture for the non-destructive testing of agricultural products and crop condition monitoring. Sections cover the combination of sensors with artificial intelligence architectures in precision agriculture, including algorithms, bio-inspired hierarchical neural maps, and novelty detection algorithms capable of detecting sudden changes in different conditions. This book offers advanced students and entry-level professionals in agricultural science and engineering, geography and geoinformation science an in-depth overview of the connection between decision-making in agricultural operations and the decision support features offered by advanced computational intelligence algorithms. Covers crop protection, automation in agriculture, artificial intelligence

in agriculture, sensing and Internet of Things (IoTs) in agriculture
Addresses AI use in weed management, disease detection, yield prediction and crop production Utilizes case studies to provide real-world insights and direction

Advances in Knowledge Discovery and Data Mining - Kamal Karlapalem 2021-05-07

The 3-volume set LNAI 12712-12714 constitutes the proceedings of the 25th Pacific-Asia Conference on Advances in Knowledge Discovery and Data Mining, PAKDD 2021, which was held during May 11-14, 2021. The 157 papers included in the proceedings were carefully reviewed and selected from a total of 628 submissions. They were organized in topical sections as follows: Part I: Applications of knowledge discovery and data mining of specialized data; Part II: Classical data mining; data mining theory and principles; recommender systems; and text analytics; Part III: Representation learning and embedding, and learning from data.

Active Learning - Burr Chen 2022-05-31

The key idea behind active learning is that a machine learning algorithm can perform better with less training if it is allowed to choose the data from which it learns. An active learner may pose "queries," usually in the form of unlabeled data instances to be labeled by an "oracle" (e.g., a human annotator) that already understands the nature of the problem. This sort of approach is well-motivated in many modern machine learning and data mining applications, where unlabeled data may be abundant or easy to come by, but training labels are difficult, time-consuming, or expensive to obtain. This book is a general introduction to active learning. It outlines several scenarios in which queries might be formulated, and details many query selection algorithms which have been organized into four broad categories, or "query selection frameworks." We also touch on some of the theoretical foundations of active learning, and conclude with an overview of the strengths and weaknesses of these approaches in practice, including a summary of ongoing work to address these open challenges and opportunities. Table of Contents: Automating Inquiry / Uncertainty Sampling / Searching Through the Hypothesis Space / Minimizing Expected Error and Variance

/ Exploiting Structure in Data / Theory / Practical Considerations
Machine Learning and Knowledge Discovery in Databases - Michele
Berlingerio 2019-01-22

The three volume proceedings LNAI 11051 - 11053 constitutes the refereed proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases, ECML PKDD 2018, held in Dublin, Ireland, in September 2018. The total of 131 regular papers presented in part I and part II was carefully reviewed and selected from 535 submissions; there are 52 papers in the applied data science, nectar and demo track. The contributions were organized in topical sections named as follows: Part I: adversarial learning; anomaly and outlier detection; applications; classification; clustering and unsupervised learning; deep learningensemble methods; and evaluation. Part II: graphs; kernel methods; learning paradigms; matrix and tensor analysis; online and active learning; pattern and sequence mining; probabilistic models and statistical methods; recommender systems; and transfer

learning. Part III: ADS data science applications; ADS e-commerce; ADS engineering and design; ADS financial and security; ADS health; ADS sensing and positioning; nectar track; and demo track.

Advances in Knowledge Discovery and Data Mining, Part I - Pang-Ning
Tan 2012-05-10

The two-volume set LNAI 7301 and 7302 constitutes the refereed proceedings of the 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2012, held in Kuala Lumpur, Malaysia, in May 2012. The total of 20 revised full papers and 66 revised short papers were carefully reviewed and selected from 241 submissions. The papers present new ideas, original research results, and practical development experiences from all KDD-related areas. The papers are organized in topical sections on supervised learning: active, ensemble, rare-class and online; unsupervised learning: clustering, probabilistic modeling in the first volume and on pattern mining: networks, graphs, time-series and outlier detection, and data manipulation: pre-processing and dimension reduction in the second volume.