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Proceedings of the International Conference on Computing and

Communication Systems Arnab Kumar Maji 2021-04-11 This book contains the latest research work presented at the International Conference on Computing and Communication Systems (I3CS 2020) held at North-Eastern Hill University (NEHU), Shillong, India. The book presents original research results, new ideas and practical development experiences which concentrate on both theory and practices. It includes papers from all areas of information technology, computer science, electronics and communication engineering written by researchers, scientists, engineers and scholar students and experts from India and abroad.

Social Media and Journalism Ján Viš□ovský 2018-10-31 Nowadays, social media are amongst the most frequently used entertainment and information sources, offering the most recent news. National, international and global issues of social media journalism involve a wide spectrum of complex questions related to the production, distribution and reception of media contents, as well as a plethora of social, cultural, economic, legal and ethical aspects to consider. The publication you are holding in your hands is an attempt to provide various theoretical and empirical frameworks that may help us better understand social media journalism from different points of view and in diverse contexts. The individual chapters are written by authors with various scholarly affiliations working in international academic circles. Even though the methods they use and problems they discuss vary, they all pursue the same objective - to find out more about the implications of the existence and popularity of social media, especially social media journalism.

Social Networks: A Framework of Computational Intelligence Witold Pedrycz 2013-12-09 This volume provides the audience with an updated, in-depth and highly coherent material on the conceptually appealing and practically sound information technology of Computational Intelligence applied to the analysis, synthesis and evaluation of social networks. The volume involves studies devoted to key issues of social networks including community structure detection in networks, online social networks, knowledge growth and evaluation, and diversity of collaboration mechanisms. The book engages a wealth of methods of Computational Intelligence along with well-known techniques of linear programming, Formal Concept Analysis, machine learning, and agent modeling. Human-centricity is of paramount relevance and this facet manifests in many ways including personalized semantics, trust metric, and personal knowledge management; just to highlight a few of these aspects. The contributors to this volume report on various essential applications including cyber attacks detection, building enterprise social networks, business intelligence and forming collaboration schemes. Given the subject area, this book is aimed

at a broad audience of researchers and practitioners. Owing to the nature of the material being covered and a way it is organized, the volume will appeal to the well-established communities including those active in various disciplines in which social networks, their analysis and optimization are of genuine relevance. Those involved in operations research, management, various branches of engineering, and economics will benefit from the exposure to the subject matter.

Intelligent Random Walk: An Approach Based on Learning Automata Ali Mohammad Saghiri 2019-01-02 This book examines the intelligent random walk algorithms based on learning automata: these versions of random walk algorithms gradually obtain required information from the nature of the application to improve their efficiency. The book also describes the corresponding applications of this type of random walk algorithm, particularly as an efficient prediction model for large-scale networks such as peer-to-peer and social networks. The book opens new horizons for designing prediction models and problem-solving methods based on intelligent random walk algorithms, which are used for modeling and simulation in various types of networks, including computer, social and biological networks, and which may be employed a wide range of real-world applications.

Machine Learning and Knowledge Discovery in Databases Peggy Cellier 2020-03-27 This two-volume set constitutes the refereed proceedings of the workshops which complemented the 19th Joint European Conference on Machine Learning and Knowledge Discovery in Databases, ECML PKDD, held in Würzburg, Germany, in September 2019. The 70 full papers and 46 short papers presented in the two-volume set were carefully reviewed and selected from 200 submissions. The two volumes (CCIS 1167 and CCIS 1168) present the papers that have been accepted for the following workshops: Workshop on Automating Data Science, ADS 2019; Workshop on Advances in Interpretable Machine Learning and Artificial Intelligence and eXplainable Knowledge Discovery in Data Mining, AIMLAI-XKDD 2019; Workshop on Decentralized Machine Learning at the Edge, DMLE 2019; Workshop on Advances in Managing and Mining Large Evolving Graphs, LEG 2019; Workshop on Data and Machine Learning Advances with Multiple Views; Workshop on New Trends in Representation Learning with Knowledge Graphs; Workshop on Data Science for Social Good, SoGood 2019; Workshop on Knowledge Discovery and User Modelling for Smart Cities, UMCIT 2019; Workshop on Data Integration and Applications Workshop, DINA 2019; Workshop on Machine Learning for Cybersecurity, MLCS 2019; Workshop on Sports Analytics: Machine Learning and Data Mining for Sports Analytics, MLSA 2019; Workshop on Categorising Different Types of Online Harassment

Languages in Social Media; Workshop on IoT Stream for Data Driven Predictive Maintenance, IoTStream 2019; Workshop on Machine Learning and Music, MML 2019; Workshop on Large-Scale Biomedical Semantic Indexing and Question Answering, BioASQ 2019.

Guide To Temporal Networks, A (Second Edition) Naoki Masuda 2020-10-05 Network science offers a powerful language to represent and study complex systems composed of interacting elements — from the Internet to social and biological systems. A Guide to Temporal Networks presents recent theoretical and modelling progress in the emerging field of temporally varying networks and provides connections between the different areas of knowledge required to address this multi-disciplinary subject. After an introduction to key concepts on networks and stochastic dynamics, the authors guide the reader through a coherent selection of mathematical and computational tools for network dynamics. Perfect for students and professionals, this book is a gateway to an active field of research developing between the disciplines of applied mathematics, physics and computer science, with applications in others including social sciences, neuroscience and biology.This second edition extensively expands upon the coverage of the first edition as the authors expertly present recent theoretical and modelling progress in the emerging field of temporal networks, providing the keys to (and connections between) the different areas of knowledge required to address this multi-disciplinary problem.

Community Detection and Stochastic Block Models Emmanuel Abbe 2018-06-04 This self-contained, compact monograph is an invaluable introduction to the field of Community Detection for researchers and students working in Machine Learning, Data Science and Information Theory.

Network Embedding Cheng Yang 2021-03-25 This is a comprehensive introduction to the basic concepts, models, and applications of network representation learning (NRL) and the background and rise of network embeddings (NE). It introduces the development of NE techniques by presenting several representative methods on general graphs, as well as a unified NE framework based on matrix factorization. Afterward, it presents the variants of NE with additional information: NE for graphs with node attributes/contents/labels; and the variants with different characteristics: NE for community-structured/large-scale/heterogeneous graphs. Further, the book introduces different applications of NE such as recommendation and information diffusion prediction. Finally, the book concludes the methods and applications and looks forward to the future directions. Many machine learning algorithms require real-valued feature vectors of data instances as inputs. By projecting data into vector spaces, representation learning

techniques have achieved promising performance in many areas such as computer vision and natural language processing. There is also a need to learn representations for discrete relational data, namely networks or graphs. Network Embedding (NE) aims at learning vector representations for each node or vertex in a network to encode the topologic structure. Due to its convincing performance and efficiency, NE has been widely applied in many network applications such as node classification and link prediction.

From Security to Community Detection in Social Networking Platforms Panagiotis Karampelas 2019-04-09 This book focuses on novel and state-of-the-art scientific work in the area of detection and prediction techniques using information found generally in graphs and particularly in social networks. Community detection techniques are presented in diverse contexts and for different applications while prediction methods for structured and unstructured data are applied to a variety of fields such as financial systems, security forums, and social networks. The rest of the book focuses on graph-based techniques for data analysis such as graph clustering and edge sampling. The research presented in this volume was selected based on solid reviews from the IEEE/ACM International Conference on Advances in Social Networks, Analysis, and Mining (ASONAM '17). Chapters were then improved and extended substantially, and the final versions were rigorously reviewed and revised to meet the series standards. This book will appeal to practitioners, researchers and students in the field.

Swarm Intelligence Based Optimization Patrick Siarry 2016-11-25 This book constitutes the thoroughly refereed post-conference proceedings of the Second International Conference on Swarm Intelligence Based Optimization, ICSIBO 2016, held in Mulhouse, France, in June 2016. The 9 full papers presented were carefully reviewed and selected from 20 submissions. They are centered around the following topics: theoretical advances of swarm intelligence metaheuristics; combinatorial discrete, binary, constrained, multi-objective, multi-modal, dynamic, noisy, and large scale optimization; artificial immune systems, particle swarms, ant colony, bacterial forging, artificial bees, fireflies algorithm; hybridization of algorithms; parallel/distributed computing, machine learning, data mining, data clustering, decision making and multi-agent systems based on swarm intelligence principles; adaptation and applications of swarm intelligence principles to real world problems in various domains.

Animal Social Networks Dr. Jens Krause 2015 The scientific study of networks - computer, social, and biological - has received an enormous amount of interest in recent years. However, the network approach has been applied to the field of animal behaviour relatively late compared to

many other biological disciplines. Understanding social network structure is of great importance for biologists since the structural characteristics of any network will affect its constituent members and influence a range of diverse behaviours. These include finding and choosing a sexual partner, developing and maintaining cooperative relationships, and engaging in foraging and anti-predator behavior. This novel text provides an overview of the insights that network analysis has provided into major biological processes, and how it has enhanced our understanding of the social organisation of several important taxonomic groups. It brings together researchers from a wide range of disciplines with the aim of providing both an overview of the power of the network approach for understanding patterns and process in animal populations, as well as outlining how current methodological constraints and challenges can be overcome. Animal Social Networks is principally aimed at graduate level students and researchers in the fields of ecology, zoology, animal behaviour, and evolutionary biology but will also be of interest to social scientists.

2019 IEEE ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM) IEEE Staff 2019-08-27 The conference solicits experimental and theoretical works on social network analysis and mining along with their application to real life situations

Social Network Analysis – Community Detection and Evolution Rokia Missaoui 2015-01-13 This book is devoted to recent progress in social network analysis with a high focus on community detection and evolution. The eleven chapters cover the identification of cohesive groups, core components and key players either in static or dynamic networks of different kinds and levels of heterogeneity. Other important topics in social network analysis such as influential detection and maximization, information propagation, user behavior analysis, as well as network modeling and visualization are also presented. Many studies are validated through real social networks such as Twitter. This edited work will appeal to researchers, practitioners and students interested in the latest developments of social network analysis.

Practical Machine Learning for Data Analysis Using Python Abdulhamit Subasi 2020-06-05 Practical Machine Learning for Data Analysis Using Python is a problem solver's guide for creating real-world intelligent systems. It provides a comprehensive approach with concepts, practices, hands-on examples, and sample code. The book teaches readers the vital skills required to understand and solve different problems with machine learning. It teaches machine learning techniques necessary to become a successful practitioner, through the presentation of real-world case studies in Python machine learning ecosystems. The book also focuses on building a foundation of machine learning knowledge to solve different

real-world case studies across various fields, including biomedical signal analysis, healthcare, security, economics, and finance. Moreover, it covers a wide range of machine learning models, including regression, classification, and forecasting. The goal of the book is to help a broad range of readers, including IT professionals, analysts, developers, data scientists, engineers, and graduate students, to solve their own real-world problems. Offers a comprehensive overview of the application of machine learning tools in data analysis across a wide range of subject areas Teaches readers how to apply machine learning techniques to biomedical signals, financial data, and healthcare data Explores important classification and regression algorithms as well as other machine learning techniques Explains how to use Python to handle data extraction, manipulation, and exploration techniques, as well as how to visualize data spread across multiple dimensions and extract useful features

Community Detection in Dynamic Social Networks Nathan Aston 2014

Deep South Allison Davis 1965

Community Detection in Temporal Multi-layer Networks Esraa Mustafa Al-sharoa 2019 Many real world systems and relational data can be modeled as networks or graphs. With the availability of large amounts of network data, it is important to be able to reduce the network's dimensionality and extract useful information from it. A key approach to network data reduction is community detection. The objective of community detection is to summarize the network by a set of modules, where the similarity within the modules is maximized while the similarity between different modules is minimized. Early work in graph based community detection methods focused on static or single layer networks. This type of networks is usually considered as an oversimplification of many real world complex systems, such as social networks where there may be different types of relationships that evolve with time. Consequently, there is a need for a meaningful representation of such complex systems. Recently, multi-layer networks have been used to model complex systems where the objects may interact through different mechanisms. However, there is limited amount of work in community detection methods for dynamic and multi-layer networks. In this thesis, we focus on detecting and tracking the community structure in dynamic and multi-layer networks. Two particular applications of interest are considered including temporal social networks and dynamic functional connectivity networks (dFCNs) of the brain. In order to detect the community structure in dynamic single-layer and multi-layer networks, we have developed methods that capture the structure of these complex networks. In Chapter 2, a low-rank + sparse estimation based evolutionary spectral clustering approach is proposed to detect and track the community structure in temporal networks. The proposed method

tries to decompose the network into low-rank and sparse parts and obtain smooth cluster assignments by minimizing the subspace distance between consecutive time points, simultaneously. Effectiveness of the proposed approach is evaluated on several synthetic and real social temporal networks and compared to the existing state-of-the-art algorithms. As the method developed in Chapter 2 is limited to dynamic single-layer networks and can only take limited amount of historic information into account, a tensor-based approach is developed in Chapter 3 to detect the community structure in dynamic single-layer and multi-layer networks. The proposed framework is used to track the change points as well as identify the community structure across time and multiple subjects of dFCNs constructed from resting state functional magnetic resonance imaging (rs-fMRI) data. The dFCNs are summarized into a set of FC states that are consistent over time and subjects. The detected community structures are evaluated using a consistency measure. In Chapter 4, an information-theoretic approach is introduced to aggregate the dynamic networks and identify the time points that are topologically similar to combine them into a tensor. The community structure of the reduced network is then detected using a tensor based approach similar to the one described in Chapter 3. In Chapter 5, a temporal block spectral clustering framework is introduced to detect and track the community structure of multi-layer temporal networks. A set of intra- and inter-adjacency matrices is constructed and combined to create a set of temporal supra-adjacency matrices. In particular, both the connections between nodes of the network within a time window, i.e. intra-layer adjacency, as well as the connections between nodes across different time windows, i.e. inter-layer adjacency are taken into account. The community structure is then detected by applying spectral clustering to these supra-adjacency matrices. The proposed approach is evaluated on dFCNs constructed from rs-fMRI across time and subjects revealing dynamic connectivity patterns between the resting state networks (RSNs).

Dynamics of Information Systems: Algorithmic Approaches Alexey Sorokin 2013-08-23 Dynamics of Information Systems: Algorithmic Approaches presents recent developments and results found by participants of the Fourth International Conference on the Dynamics of Information Systems, which took place at the University of Florida, Gainesville FL, USA on February 20-22, 2012. The purpose of this conference was to bring together scientists and engineers from industry, government, and universities to exchange knowledge and results in a broad range of topics relevant to the theory and practice of the dynamics of information systems. Dynamics of Information plays an increasingly critical role in our society. The influence of information on social, biological, genetic, and military

systems must be better understood to achieve large advances in the capability and understanding of these systems. Applications are widespread and include: detection of terrorist networks, design of highly efficient businesses, computer networks, quantum entanglement, genome modeling, multi-robotic systems, and industrial and manufacturing safety. The book contains state-of-the-art work on theory and practice relevant to the dynamics of information systems. It covers algorithmic approaches to numerical computations with infinite and infinitesimal numbers; presents important problems arising in service-oriented systems, such as dynamic composition and analysis of modern service-oriented information systems and estimation of customer service times on a rail network from GPS data; addresses the complexity of the problems arising in stochastic and distributed systems; and discusses modulating communication for improving multi-agent learning convergence. Network issues—in particular minimum-risk maximum-clique problems, vulnerability of sensor networks, influence diffusion, community detection, and link prediction in social network analysis, as well as a comparative analysis of algorithms for transmission network expansion planning—are described in later chapters. *Emerging Research Challenges and Opportunities in Computational Social Network Analysis and Mining* Nitin Agarwal 2018-09-17 The contributors in this book share, exchange, and develop new concepts, ideas, principles, and methodologies in order to advance and deepen our understanding of social networks in the new generation of Information and Communication Technologies (ICT) enabled by Web 2.0, also referred to as social media, to help policy-making. This interdisciplinary work provides a platform for researchers, practitioners, and graduate students from sociology, behavioral science, computer science, psychology, cultural studies, information systems, operations research and communication to share, exchange, learn, and develop new concepts, ideas, principles, and methodologies. Emerging Research Challenges and Opportunities in Computational Social Network Analysis and Mining will be of interest to researchers, practitioners, and graduate students from the various disciplines listed above. The text facilitates the dissemination of investigations of the dynamics and structure of web based social networks. The book can be used as a reference text for advanced courses on Social Network Analysis, Sociology, Communication, Organization Theory, Cyber-anthropology, Cyber-diplomacy, and Information Technology and Justice. Advances in Network Clustering and Blockmodeling Patrick Doreian 2020-02-03 Provides an overview of the developments and advances in the field of network clustering and blockmodeling over the last 10 years This book offers an integrated treatment of network clustering and blockmodeling, covering all of the newest approaches and methods that

have been developed over the last decade. Presented in a comprehensive manner, it offers the foundations for understanding network structures and processes, and features a wide variety of new techniques addressing issues that occur during the partitioning of networks across multiple disciplines such as community detection, blockmodeling of valued networks, role assignment, and stochastic blockmodeling. Written by a team of international experts in the field, Advances in Network Clustering and Blockmodeling offers a plethora of diverse perspectives covering topics such as: bibliometric analyses of the network clustering literature; clustering approaches to networks; label propagation for clustering; and treating missing network data before partitioning. It also examines the partitioning of signed networks, multimode networks, and linked networks. A chapter on structured networks and coarsegrained descriptions is presented, along with another on scientific coauthorship networks. The book finishes with a section covering conclusions and directions for future work. In addition, the editors provide numerous tables, figures, case studies, examples, datasets, and more. Offers a clear and insightful look at the state of the art in network clustering and blockmodeling Provides an excellent mix of mathematical rigor and practical application in a comprehensive manner Presents a suite of new methods, procedures, algorithms for partitioning networks, as well as new techniques for visualizing matrix arrays Features numerous examples throughout, enabling readers to gain a better understanding of research methods and to conduct their own research effectively Written by leading contributors in the field of spatial networks analysis Advances in Network Clustering and Blockmodeling is an ideal book for graduate and undergraduate students taking courses on network analysis or working with networks using real data. It will also benefit researchers and practitioners interested in network analysis.

Graph Algorithms Mark Needham 2019-05-16 Discover how graph algorithms can help you leverage the relationships within your data to develop more intelligent solutions and enhance your machine learning models. You'll learn how graph analytics are uniquely suited to unfold complex structures and reveal difficult-to-find patterns lurking in your data. Whether you are trying to build dynamic network models or forecast real-world behavior, this book illustrates how graph algorithms deliver value—from finding vulnerabilities and bottlenecks to detecting communities and improving machine learning predictions. This practical book walks you through hands-on examples of how to use graph algorithms in Apache Spark and Neo4j—two of the most common choices for graph analytics. Also included: sample code and tips for over 20 practical graph algorithms that cover optimal pathfinding, importance through centrality, and

community detection. Learn how graph analytics vary from conventional statistical analysis Understand how classic graph algorithms work, and how they are applied Get guidance on which algorithms to use for different types of questions Explore algorithm examples with working code and sample datasets from Spark and Neo4j See how connected feature extraction can increase machine learning accuracy and precision Walk through creating an ML workflow for link prediction combining Neo4j and Spark

Dynamics On and Of Complex Networks, Volume 2 Animesh Mukherjee 2013-06-04 This self-contained book systematically explores the statistical dynamics on and of complex networks with a special focus on time-varying networks. In the constantly changing modern world, there is an urgent need to understand problems related to systems that dynamically evolve in either structure or function, or both. This work is an attempt to address such problems in the framework of complex networks. Dynamics on and of Complex Networks, Volume 2: Applications to Time-Varying Dynamical Systems is a collection of surveys and cutting-edge research contributions exploring key issues, challenges, and characteristics of dynamical networks that emerge in various complex systems. Toward this goal, the work is thematically organized into three main sections with the primary thrust on time-varying networks: Part I studies social dynamics; Part II focuses on community identification; and Part III illustrates diffusion processes. The contributed chapters in this volume are intended to promote cross-fertilization in several research areas and will be valuable to newcomers in the field, experienced researchers, practitioners, and graduate students interested in pursuing research in dynamical networks with applications to computer science, statistical physics, nonlinear dynamics, linguistics, and the social sciences. This volume follows Dynamics On and Of Complex Networks: Applications to Biology, Computer Science, and the Social Sciences (2009), ISBN 978-0-8176-4750-6.

Modeling and Using Context Patrick Brézillon 2017-06-06 This book constitutes the proceedings of the 10th International and Interdisciplinary Conference on Modeling and Using Context, CONTEXT 2017, held in Paris, France, in June 2017. The 26 full papers and 15 short papers presented were carefully reviewed and selected from 88 submissions. The papers feature research in a wide range of disciplines related to issues of context and contextual knowledge and discuss commonalities across and differences between the disciplines' approaches to the study of context. They are organized in the following topical sections: context in representation; context modeling of human activities; context in communication; context awareness; and various specific topics.

Online Social Networks Valerio Arnaboldi 2015-09-25 Online Social Networks: Human Cognitive Constraints in Facebook and Twitter provides new insights into the structural properties of personal online social networks and the mechanisms underpinning human online social behavior. As the availability of digital communication data generated by social media is revolutionizing the field of social networks analysis, the text discusses the use of large- scale datasets to study the structural properties of online ego networks, to compare them with the properties of general human social networks, and to highlight additional properties. Users will find the data collected and conclusions drawn useful during design or research service initiatives that involve online and mobile social network environments. Provides an analysis of the structural properties of ego networks in online social networks Presents quantitative evidence of the Dunbar's number in online environments Discusses original structural and dynamic properties of human social network through OSN analysis

Social Network Analysis for Startups Maksim Tsvetovat 2011-10-06 SNA techniques are derived from sociological and social-psychological theories and take into account the whole network (or, in case of very large networks such as Twitter -- a large segment of the network).

Dynamic Social Networks in Agent-based Modelling Holzhauer, Sascha 2017 Agent-based modelling enables the explicit representation of entities and their interaction with each other and the environment, and so it became an important method to study complex systems. Social networks form an important part of agent-based social simulation, as they define the topology of agent interaction. This dissertation initially identifies important properties of social networks and their dynamics and reviews their representation in agent-based models of relevant domains. A classification of levels of detail for the network modelling components initialisation, dynamics of networks, and dynamics on networks is proposed and guides the identification of deficits. A formal, iterative evaluation framework is developed to quantitatively assess network modelling approaches under a set of weighted criteria (representativity, adjustability, validity, and efficiency). The framework is applied to an abstract model of opinion dynamics and to an empirically grounded model of social influence. A lifestyle-specific network survey is designed, conducted, and analysed and helps to ground the evaluation of the network modelling's representativity on empirical data. The study finds significant differences of degree and distance distributions as well as in the composition of ego networks between lifestyles. New network modelling approaches are developed to account for requirements in agent-based models such as agent-type specific link preferences, degree and distance distributions, community structures, and interaction dynamics. The comparison of simple to

elaborated network modelling for the application models shows a significant impact on simulation results, highlighting the need for informed decisions about suitable approaches.

Mobile, Ubiquitous, and Intelligent Computing James J. (Jong Hyuk) Park 2013-08-19 MUSIC 2013 will be the most comprehensive text focused on the various aspects of Mobile, Ubiquitous and Intelligent computing. MUSIC 2013 provides an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of intelligent technologies in mobile and ubiquitous computing environment. MUSIC 2013 is the next edition of the 3rd International Conference on Mobile, Ubiquitous, and Intelligent Computing (MUSIC-12, Vancouver, Canada, 2012) which was the next event in a series of highly successful International Workshop on Multimedia, Communication and Convergence technologies MCC-11 (Crete, Greece, June 2011), MCC-10 (Cebu, Philippines, August 2010).

Community Detection in Dynamic Networks Niloufar Afsariardchi 2013 "A reasonable representation of some complex systems such as social and biological systems is a network topology that allows its components and interactions among them to change over time. Understanding the time-dependence of these networks can lead to invaluable insight about characteristics and structure of time-varying networks. In this thesis, several classes of static and dynamic clustering algorithms and ideas are reviewed. A challenge arising in dynamic clustering schemes is that the detected communities are not independent over time and the identified clusters at one point of time should not dramatically deviate from the results of previous timesteps. It is especially important to reduce large short term variations and ensure that communities smoothly change over time. Here we present a novel method which is built upon a probabilistic generative Bayesian model to address the problem of identifying consistent and stable overlapping communities in dynamic networks. Synthetic and real networks are used to evaluate the performance with respect to different parameter settings, the model order selection, and the run-time of the proposed algorithm. Performance analysis indicates thatthe algorithm proposed in this thesis outperforms several other state-of-the-art algorithms and provides valuable insights into the evolution and underlying structure." --

Advanced Data Mining and Applications Xudong Luo 2014-12-17 This book constitutes the proceedings of the 10th International Conference on Advanced Data Mining and Applications, ADMA 2014, held in Guilin, China during December 2014. The 48 regular papers and 10 workshop papers presented in this volume were carefully reviewed and selected from 90 submissions. They deal with the following topics: data mining, social

network and social media, recommend systems, database, dimensionality reduction, advance machine learning techniques, classification, big data and applications, clustering methods, machine learning, and data mining and database.

Advanced Information Systems Engineering Marcello La Rosa 2021-06-23 This book constitutes the proceedings of the 33rd International Conference on Advanced Information Systems Engineering, CAiSE 2021, which was held online during June 28-July 2, 2021. The conference was planned to take place in Melbourne, Australia, and changed to an online format due to the COVID-19 pandemic. The papers included in these proceedings focus on intelligent information systems and deal with novel approaches to IS engineering; models, methods and techniques in IS engineering; architectures and platforms for IS engineering; and domain specific and multi-aspect in IS engineering.

Knowledge Discovery in Databases: PKDD 2007 Joost N. Kok 2007-08-30 This book constitutes the refereed proceedings of the 11th European Conference on Principles and Practice of Knowledge Discovery in Databases, PKDD 2007, held in Warsaw, Poland, co-located with ECML 2007, the 18th European Conference on Machine Learning. The 28 revised full papers and 35 revised short papers present original results on leading-edge subjects of knowledge discovery from conventional and complex data and address all current issues in the area.

Small Worlds Duncan J. Watts 2018-06-05

Detection and Dynamic of Local Communities in Large Social Networks Christel Blaise Ngonmang Kaledje 2014 Complex networks arises in many contexts and applications : biology, transports, online social networks (ONS). Many recent applications deal with large amount of personal data. The links between peoples may reflect freindship, messaging, or some common interests. Entities in complex network, and espacially persons, tend to form communities. Here, a community can be defined as a set of entities interacting more between each other than with the rest of the network. The topic of community detection in large networks as been extensively studied during the last decades, following the seminal work by newman, who popularized the modularity criteria. However, most community detection algorithms assume that the network is entirely known and that is does not evolve with time. This is usually not true in real world applications. In this thesis, we start by proposing novel methods for local community identification (considering only the vicinity of a given node, without accessing the whole graph). Our algorithms experimentally outperform the state-of-art methods. We show how to use the local communities to enhance the prediction of a user's behaviour. Secondly, we propose some approaches to predict the evolution of the detected

communities based on machine learning methods. Finally we propose a framework for storing and processing distributed social networks in a Big Data environment. The proposed methods are validated using (among others) real world data, provided by a industrial partner operating a major social network platform in France (40 millions of users).

Complex Networks and Their Applications VII Luca Maria Aiello 2018-12-01 This book highlights cutting-edge research in the field of network science, offering scientists, researchers, students and practitioners a unique update on the latest advances in theory, together with a wealth of applications. It presents the peer-reviewed proceedings of the VII International Conference on Complex Networks and their Applications (COMPLEX NETWORKS 2018), which was held in Cambridge on December 11–13, 2018. The carefully selected papers cover a wide range of theoretical topics such as network models and measures; community structure and network dynamics; diffusion, epidemics and spreading processes; and resilience and control; as well as all the main network applications, including social and political networks; networks in finance and economics; biological and neuroscience networks; and technological networks.

Community detection and mining in social media Lei Tang 2022-06-01 The past decade has witnessed the emergence of participatory Web and social media, bringing people together in many creative ways. Millions of users are playing, tagging, working, and socializing online, demonstrating new forms of collaboration, communication, and intelligence that were hardly imaginable just a short time ago. Social media also helps reshape business models, sway opinions and emotions, and opens up numerous possibilities to study human interaction and collective behavior in an unparalleled scale. This lecture, from a data mining perspective, introduces characteristics of social media, reviews representative tasks of computing with social media, and illustrates associated challenges. It introduces basic concepts, presents state-of-the-art algorithms with easy-to-understand examples, and recommends effective evaluation methods. In particular, we discuss graph-based community detection techniques and many important extensions that handle dynamic, heterogeneous networks in social media. We also demonstrate how discovered patterns of communities can be used for social media mining. The concepts, algorithms, and methods presented in this lecture can help harness the power of social media and support building socially-intelligent systems. This book is an accessible introduction to the study of \emph{community detection and mining in social media}. It is an essential reading for students, researchers, and practitioners in disciplines and applications where social media is a key source of data that piques our curiosity to understand, manage, innovate, and excel. This book is supported by additional materials, including lecture

slides, the complete set of figures, key references, some toy data sets used in the book, and the source code of representative algorithms. The readers are encouraged to visit the book website for the latest information. Table of Contents: Social Media and Social Computing / Nodes, Ties, and Influence / Community Detection and Evaluation / Communities in Heterogeneous Networks / Social Media Mining

Data Mining in Dynamic Social Networks and Fuzzy Systems Bhatnagar, Vishal 2013-06-30 Many organizations, whether in the public or private sector, have begun to take advantage of the tools and techniques used for data mining. Utilizing data mining tools, these organizations are able to reveal the hidden and unknown information from available data. Data Mining in Dynamic Social Networks and Fuzzy Systems brings together research on the latest trends and patterns of data mining tools and techniques in dynamic social networks and fuzzy systems. With these improved modern techniques of data mining, this publication aims to provide insight and support to researchers and professionals concerned with the management of expertise, knowledge, information, and organizational development.

Advances in Knowledge Discovery and Data Mining Vincent S. Tseng 2014-05-08 The two-volume set LNAI 8443 + LNAI 8444 constitutes the refereed proceedings of the 18th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2014, held in Tainan, Taiwan, in May 2014. The 40 full papers and the 60 short papers presented within these proceedings were carefully reviewed and selected from 371 submissions. They cover the general fields of pattern mining; social network and social media; classification; graph and network mining; applications; privacy preserving; recommendation; feature selection and reduction; machine learning; temporal and spatial data; novel algorithms; clustering; biomedical data mining; stream mining; outlier and anomaly detection; multi-sources mining; and unstructured data and text mining.

Data Science and Classification Vladimir Batagelj 2006-09-05 Data Science and Classification provides new methodological developments in data analysis and classification. The broad and comprehensive coverage includes the measurement of similarity and dissimilarity, methods for classification and clustering, network and graph analyses, analysis of symbolic data, and web mining. Beyond structural and theoretical results, the book offers application advice for a variety of problems, in medicine, microarray analysis, social network structures, and music.

PRICAI 2014: Trends in Artificial Intelligence Duc-Nghia Pham 2014-11-12 This book constitutes the refereed proceedings of the 13th Pacific Rim Conference on Artificial Intelligence, PRICAI 2014, held in Gold Coast, Queensland, Australia, in December 2014. The 74 full papers

and 20 short papers presented in this volume were carefully reviewed and selected from 203 submissions. The topics include inference; reasoning; robotics; social intelligence. AI foundations; applications of AI; agents; Bayesian networks; neural networks; Markov networks; bioinformatics; cognitive systems; constraint satisfaction; data mining and knowledge discovery; decision theory; evolutionary computation; games and interactive entertainment; heuristics; knowledge acquisition and ontology; knowledge representation, machine learning; multimodal interaction; natural language processing; planning and scheduling; probabilistic.

Link Mining: Models, Algorithms, and Applications Philip S. Yu 2010-09-16 This book offers detailed surveys and systematic discussion of models, algorithms and applications for link mining, focusing on theory and technique, and related applications: text mining, social network analysis, collaborative filtering and bioinformatics.