Social Network Data Analytics

Social network analysis applications have experienced tremendous advances within the last few years due in part to increasing trends towards users interacting with each other on the internet. Social networks are organized as graphs, and the data on social networks takes on the form of massive streams, which are mined for a variety of purposes.

Social Network Data Analytics covers an important niche in the social network analytics field. This edited volume, contributed by prominent researchers in this field, presents a wide selection of topics on social network data mining such as Structural Properties of Social Networks, Algorithms for Structural Discovery of Social Networks and Content Analysis in Social Networks. This book is also unique in focusing on the data analytical aspects of social networks in the internet scenario, rather than the traditional sociology-driven emphasis prevalent in the existing books, which do not focus on the unique data-intensive characteristics of online social networks.

Emphasis is placed on simplifying the content so that students and practitioners benefit from this book. This book targets advanced level students and researchers concentrating on computer science as a secondary text or reference book. Data mining, database, information security, electronic commerce and machine learning professionals will find this book a valuable asset, as well as primary associations such as ACM, IEEE and Management Science.

Guide to HTML, JavaScript, and PHP

For Scientists and Engineers

This book enables readers to quickly develop a working knowledge of HTML, JavaScript and PHP. The text emphasizes a hands-on approach to learning and makes extensive use of examples. A detailed science, engineering, or mathematics background is not required to understand the material, making the book ideally suitable for self-study or an introductory course in programming.

Features:
- Enables readers to quickly develop a working knowledge of HTML, JavaScript and PHP.
- Emphasizes a hands-on approach to learning and makes extensive use of examples.
- Includes a Glossary and an extensive set of programming exercises.

For the contents:
- Introducing HTML and JavaScript.
- HTML Document Basics.
- HTML Tables, Forms, Lists, and Frames.
- Fundamentals of the JavaScript Language.
- Using Arrays in HTML/JavaScript.
- JavaScript Functions.
- Creating a Server-Side Environment with PHP.
- Working with PHP.
- PHP Arrays.

Fields of interest:
- Programming Techniques; Programming Languages, Compilers, Interpreters; User Interfaces and Human Computer Interaction.

Introduction to Reliable and Secure Distributed Programming

In modern computing a program is usually distributed among several processes. The fundamental challenge when developing reliable and secure distributed programs is to support the cooperation of processes required to execute a common task, even when some of these processes fail. Failures may range from crashes to adversarial attacks by malicious processes.

Cachin, Guerraoui, and Rodrigues present an introductory description of fundamental distributed programming abstractions together with algorithms to implement them in distributed systems, where processes are subject to crashes and malicious attacks. The authors follow an incremental approach by first introducing basic abstractions in simple distributed environments, before moving to more sophisticated abstractions and more challenging environments. Each core chapter is devoted to one topic, covering reliable broadcast, shared memory, consensus, and extensions of consensus. For every topic, many exercises and their solutions enhance the understanding.

Features:
- Introduces fundamental reliable and secure distributed programming abstractions, and offers algorithms to implement these abstractions.
- Incremental approach explores basic abstractions before moving to more sophisticated concepts.
- The book functions as a complete practical reference to the basics of reliable distributed programming applications.
- Includes a companion set of running examples implemented in Java.

Fields of interest:
- Algorithm Analysis and Problem Complexity; Computer Communication Networks; Operating Systems.

Discount group:
- P

Due February 2011
- $159.00 approx.

Due May 2011
- 2011. XIV, 458 p. Hardcover
- $69.95 approx.

Due January 2011
- ISBN 978-3-642-15259-7
- $69.95 approx.
Advanced Digital Preservation

There is growing recognition of the need to address the fragility of digital information, on which our society heavily depends for smooth operation in all aspects of daily life. This has been discussed in many books and articles on digital preservation, so why is there a need for yet one more? Because, for the most part, those other publications focus on documents, images and webpages – objects that are normally rendered to be simply displayed by software to a human viewer. Yet there are clearly many more types of digital objects that may need to be preserved, such as databases, scientific data and software itself.

David Giaretta, Director of the Alliance for Permanent Access, and his contributors explain why the tools and techniques used for preserving rendered objects are inadequate for all these other types of digital objects, and they provide the concepts, techniques and tools that are needed. The book is structured in three parts. The first part is on theory, i.e., the concepts and techniques that are essential for preserving digitally encoded information. The second part then shows practice, i.e., the use and validation of these tools and techniques. Finally, the third part concludes by addressing how to judge whether money is being well spent, in terms of effectiveness and cost sharing.

Various examples of digital objects from many sources are used to explain the tools and techniques presented. The presentation style mainly aims at practitioners in libraries, archives and industry who are either directly responsible for preservation or who need to prepare for audits of their archives.

Features
➤ Deals both with rendered objects and arbitrary object collections like databases, scientific data sets, software, etc. ➤ Encompasses both technical and economical issues ➤ Integrates digital rights management, authentication, and accreditation

Fields of interest
Information Storage and Retrieval; Library Science; Computers and Society

Target groups
Professional/practitioner

Discount group
P

Guide to Teaching Computer Science
An Activity-Based Approach

This guide presents both a conceptual framework and detailed implementation guidelines for general computer science (CS) teaching. The content is clearly written and structured to be applicable to all levels of CS education and for any teaching organization, without limiting its focus to instruction for any specific curriculum, programming language or paradigm. Features: presents an overview of research in CS education; examines strategies for teaching problem-solving, evaluating pupils, and for dealing with pupils’ misunderstandings; provides learning activities throughout the book; proposes active-learning-based classroom teaching methods, as well as methods specifically for lab-based teaching; discusses various types of questions that a CS instructor, tutor, or trainer can use for a range of different teaching situations; investigates thoroughly issues of lesson planning and course design; describes frameworks by which prospective CS teachers gain their first teaching experience.

Features
➤ Presents both a conceptual framework and detailed implementation guidelines for general computer science teaching ➤ Clearly written and structured to be applicable to all levels of education and for any teaching organization, without limiting its focus to instruction for any specific curriculum, programming language or paradigm ➤ Provides learning activities throughout the book

Fields of interest
Computers and Education; Teaching and Teacher Education; Science Education

Target groups
Upper undergraduate

Discount group
P
Analysis and Design of Advice

The premise that giving advice is a design problem is central to this book. It means that advice is seen as an artefact, as information communicated by an advisor to an advisee. Drawing on arguments in philosophy, recent empirical research in individual and group decision-making, and in information systems engineering, the book offers a rigorous approach to the analysis and design of advice in real-world decision situations, in which the advisor must manage with variously imprecise, unclear, incomplete or conflicting qualitative information.

Features
- Treats advice as a general design artifact, independent of the application domain
- Rejects unrealistic assumptions of classical decision theory about perfect rationality and exact numerical, quantitative estimates of probability
- Innovatively combines elements from management science, computer science, and mathematical logic

Contents

Fields of interest
Software Engineering; Business/Management Science, general; Computers and Society

Target groups
Graduate

Discount group
P

Change Management for Semantic Web Services

Change Management for Semantic Web Services provides a thorough analysis of change management in the lifecycle of services for databases and workflows, including changes that occur at the individual service level or at the aggregate composed service level. This book describes taxonomy of changes that are expected in semantic service oriented environments. The process of change management consists of detecting, propagating, and reacting to changes.

Change Management for Semantic Web Services is one of the first books that discuss the development of a theoretical foundation for managing changes in atomic and long-term composed services. This book also proposes a formal model and a change language to provide sufficient semantics for change management; it devises an automatic process to react to, verify, and optimize changes. Case studies and examples are presented in the last section of this book.

Features
- Provides a thorough analysis of change management in semantic service oriented environments
- Discusses the development of a theoretical foundation for managing changes in atomic and long-term composed services
- Includes case studies and examples

Contents

Fields of interest
Information Systems Applications (incl.Internet); Database Management; Information Systems and Communication Service

Target groups
Research

Discount group
P
Community-Built Databases
Research and Development

Wikipedia, Flickr, You Tube, Facebook, LinkedIn are all examples of large community-built databases, although with quite diverse purposes and collaboration patterns. Their usage and dissemination will further grow introducing e.g. new semantics, personalization, or interactive media. Pardede delivers the first comprehensive research reference on community-built databases. The contributions discuss various technical and social aspects of research in and development in areas like in Web science, social networks, and collaborative information systems.

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Features
▶ First book to combine social and technical aspects of community-built databases
▶ Discusses issues of social networks and Web communities independent of a specific platform or product
▶ Opens up new research in areas such as Web science, social networks, distributed databases, and collaborative information systems
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▶ Opens up new research in areas such as Web science, social networks, distributed databases, and collaborative information systems
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▶ Opens up new research in areas such as Web science, social networks, distributed databases, and collaborative information systems

Fields of interest
Information Systems Applications (incl.Internet); Information Storage and Retrieval; Computers and Society

Target groups
Research

Discount group
P

Guide to e-Science
Next Generation Scientific Research and Development

This guidebook on e-science presents real-world examples of practices and applications, demonstrating how a range of computational technologies and tools can be employed to build essential infrastructures supporting next-generation scientific research. Each chapter provides introductory material on core concepts and principles, as well as descriptions and discussions of relevant e-science methodologies, architectures, tools, systems, services and frameworks. Features: includes contributions from an international selection of preeminent e-science experts and practitioners; discusses use of mainstream grid computing and peer-to-peer grid technology for "open" research and resource sharing in scientific research; presents varied methods for data management in data-intensive research; investigates issues of e-infrastructure interoperability, security, trust and privacy for collaborative research; examines workflow technology for the automation of scientific processes; describes applications of e-science.

Features
▶ Includes contributions from an international selection of preeminent e-science experts and practitioners
▶ Examines how e-science techniques can be used to facilitate "open" research and resource sharing, data-intensive research, collaborative research, and scientific workflows
▶ Describes applications of e-science, highlighting systems used in the fields of biometrics, clinical medicine, and ecology

Fields of interest
Information Systems and Communication Service; Computer Applications

Target groups
Professional/practitioner

Discount group
P

A Developer’s Guide to the Semantic Web

The Semantic Web represents a vision for how to make the huge amount of information on the Web automatically processable by machines on a large scale. For this purpose, a whole suite of standards, technologies and related tools have been specified and developed over the last couple of years, and they have now become the foundation for numerous new applications.

A Developer’s Guide to the Semantic Web helps the reader to learn the core standards, key components, and underlying concepts. It provides in-depth coverage of both the what-is and how-to aspects of the Semantic Web. From Yu’s presentation, the reader will obtain not only a solid understanding about the Semantic Web, but also learn how to combine all the pieces to build new applications on the Semantic Web.

Features
▶ Offers complete coverage of all core standards and technical components of the Semantic Web, including RDF, RDFS, OWL 1 and 2, SPARQL (including features offered by SPARQL 1.1); and related technologies such as Turtle, Microformats, RDFa, GRDDL and SKOS
▶ Provides an in-depth description of many well-known applications and projects such as FOAF, semantic Wiki, SearchMonkey by Yahoo!, Rich Snippets by Google, Open Linked Data Project and DBpedia Project
▶ Explains the key concepts, core standards and technical components in real-world examples, guiding the readers step-by-step through the development process to bridge the gap between what-is and how-to
▶ Includes source code for the examples and application projects, ready for download from the author’s website, www.liyangyu.com

Fields of interest
Information Storage and Retrieval; Information Systems Applications (incl.Internet)

Target groups
Professional/practitioner

Discount group
P