**Modeling Trust Context in Networks**

We make complex decisions every day, requiring trust in many different entities for different reasons. These decisions are not made by combining many isolated trust evaluations. Many interlocking factors play a role, each dynamically impacting the others. In this brief, “trust context” is defined as the system level description of how the trust evaluation process unfolds. Networks today are part of almost all human activity, supporting and shaping it. Applications increasingly incorporate new interdependencies and new trust contexts. Social networks connect people and organizations throughout the globe in cooperative and competitive activities. Information is created and consumed at a global scale. Systems, devices, and sensors create and process data, manage physical systems, and participate in interactions with other entities, people and systems alike. To study trust in such applications, we need a multi-disciplinary approach. This book reviews the components of the trust context through a broad review of recent literature in many different fields of study. Common threads relevant to the trust context across many application domains are also illustrated.

**A Multimodal End-2-End Approach to Accessible Computing**

- Explores applications of state-of-the-art technology via a 3-part approach: ‘Design,’ ‘Development,’ ‘Maintenance’
- With a foreword from Nick Tanton, the BBC’s Head of Technology, Switchover Help Scheme
- Each chapter explores real life projects and includes pointers to free downloadable software

**The Language of Mathematics**

A Linguistic and Philosophical Investigation

- Introduction
- 1.1 Challenges
- 1.2 Concepts
- 1.2.1 Linguistics and Mathematics
- 1.2.2 Time
- 1.2.3 Full Adaptivity
- 3 Scope
- 1.4 Structure
- 1.5 Previous Analyses
- 1.5.1 Ranta
- 1.5.2 de Bruijn
- 1.5.3 Computer Languages
- 1.5.4 Other Work
- 2 The Language of Mathematics
- 2.1 Text and Symbol
- 2.2 Adaptivity
- 2.3 Textual Mathematics
- 2.4 Symbolic Mathematics
- 2.4.1 Ranta’s Account and Its Limitations
- 2.4.2 Surface Phenomena
- 2.4.3 Grammatical Status
- 2.4.4 Variables
- 2.4.5 Presuppositions
- 2.4.6 Symbolic Constructions
- 2.5 Rhetorical Structure
- 2.5.1 Blocks
- 2.5.2 Variables and Assumptions
- 2.5.3 Redefinition
- 2.5.4 Related Work

**Due April 2013**

2013. X, 105 p. 13 illus. (SpringerBriefs in Computer Science) Softcover

- $39.95
- ISBN 978-1-4614-7030-4

**Due May 2013**

2013. XII, 226 p. 62 illus, 49 in color. (Human–Computer Interaction Series) Hardcover

- $109.00

**Available**

2013. XII, 277 p. 15 illus. (Lecture Notes in Computer Science / Theoretical Computer Science and General Issues, Volume 7805) Softcover

- $72.00
- ISBN 978-3-642-37011-3
Recommender Systems and the Social Web
Leveraging Tagging Data for Recommender Systems

There is an increasing demand for recommender systems due to the information overload users are facing on the Web. The goal of a recommender system is to provide personalized recommendations of products or services to users. With the advent of the Social Web, user-generated content has enriched the social dimension of the Web. As user-provided content data also tells us something about the user, one can learn the user's individual preferences from the Social Web. This opens up completely new opportunities and challenges for recommender systems research. Fatih Gedikli deals with the question of how user-provided tagging data can be used to build better recommender systems. A tag recommender algorithm is proposed which recommends tags for users to annotate their favorite online resources. The author also proposes algorithms which exploit the user-provided tagging data and produce more accurate recommendations. On the basis of this idea, he shows how tags can be used to explain to the user the automatically generated recommendations in a clear and intuitively understandable form.

Feature
► Publication in the field of technical sciences

Contents

Fields of interest
Data Mining and Knowledge Discovery; Information Storage and Retrieval; User Interfaces and Human Computer Interaction

Target groups
Research

Product category
Monograph

Due April 2013
2013. XII, 114 p. 29 illus., 14 in color. Softcover
► $89.99
ISBN 978-3-658-01947-1

Security for Wireless Implantable Medical Devices

In the treatment of chronic diseases, wireless Implantable Medical Devices (IMDs) are commonly used to communicate with an outside programmer (reader). Such communication raises serious security concerns, such as the ability for hackers to gain access to a patient's medical records. This brief provides an overview of such attacks and the new security challenges, defenses, design issues, modeling and performance evaluation in wireless IMDs. While studying the vulnerabilities of IMDs and corresponding security defenses, the reader will also learn the methodologies and tools for designing security schemes, modeling, security analysis, and performance evaluation, thus keeping pace with quickly-evolving wireless security research.

Contents
Overview.- Related Work.- The Resource Depletion Attack and Defense Scheme.- IMD Access Control during Emergencies.- Conclusion and Future Directions.

Fields of interest
Coding and Information Theory; Communications Engineering, Networks; Systems and Data Security

Target groups
Research

Product category
Brief

Due May 2013
2013. VIII, 49 p. 13 illus. (SpringerBriefs in Computer Science) Softcover
► $39.95

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Fields of interest
Coding and Information Theory; Communications Engineering, Networks; Systems and Data Security

Target groups
Research

Product category
Brief

Available
► $72.00
ISBN 978-3-642-36823-3

Security for Wireless Implantable Medical Devices

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Fields of interest
Coding and Information Theory; Communications Engineering, Networks; Systems and Data Security

Target groups
Research

Product category
Brief
Counterterrorism and Cybersecurity

Total Information Awareness

Features
- Provides a broad survey of the United States’ counterterrorism history, the use of artificial intelligence in data mining, social media and privacy, cyber attacks and prevention, and longstanding issues of war and peace.
- Closely examines how Total Information Awareness, a governmental data mining project focused on scanning public and private data, plays an integral role in cybersecurity.
- Analyzes recent cyberattacks across the globe orchestrated by ‘hacktivist’ groups, such as Anonymous.

Contents

Fields of interest
Information Systems Applications (incl.Internet); Multimedia Information Systems; Management of Computing and Information Systems

Target groups
Research

Product category
Monograph

Trust-based Collective View Prediction

Collective view prediction is to judge the opinions of an active web user based on unknown elements by referring to the collective mind of the whole community. Content-based recommendation and collaborative filtering are two mainstream collective view prediction techniques. They generate predictions by analyzing the text features of the target object or the similarity of users’ past behaviors.

Features
- Outlines recent theoretical advances and algorithmic innovations conducted in trust-based collective view prediction.
- Analyses the existing vulnerabilities of the content-based recommendation and collaborative filtering techniques, and proposes new, innovative methods for overcoming them.
- Introduces two new trust-based prediction algorithms: one collaborative algorithm based on the second-order Markov random walk model, and one Bayesian fitting model for combining multiple predictors.

Contents

Fields of interest
Data Mining and Knowledge Discovery; Information Systems Applications (incl.Internet); Artificial Intelligence (incl. Robotics)

Target groups
Research

Product category
Monograph

Cloud Computing

Methods and Practical Approaches

Features
- Presents the state of the art in cloud computing technologies, infrastructures, and service delivery and deployment models.
- Discusses relevant theoretical frameworks, practical approaches and suggested methodologies.
- Offers guidance and best practices for the development of cloud-based services and infrastructures and examines management aspects of cloud computing.

Contents

Fields of interest
Computer Communication Networks; Software Engineering; Business Information Systems

Target groups
Research

Product category
Contributed volume
A. Paquette, NHTV Breda University of Applied Sciences, The Netherlands

An Introduction to Computer Graphics for Artists

An Introduction to Computer Graphics for Artists is an application-independent, reader-friendly primer for anyone with a serious desire to understand 3D Computer Graphics. Written by a veteran of the computer graphics industry whose previous career included filmed animation and various spells as Art Director for video games, Andrew Paquette draws on his experiences both as an artist and a manager. Far too often artists, even professionals, lack a basic understanding of the principles of computer graphics. The result is inefficiency and lower quality of work.

Features
► Designed to help the reader strengthen his or her ability to use 3D graphics through practice ► Packed with detailed exercises ► Includes numerous projects which can be performed in class, during workshops or as homework ► Provides insider information on industry standards for professional work

Contents

Fields of interest
Computer Graphics; Arts; Computer Imaging, Vision, Pattern Recognition and Graphics

Target groups
Lower undergraduate

Product category
Undergraduate textbook

M. Prokopenko, Commonwealth Scientific and Industrial Research Organisation, North Ryde, NSW, Australia (Ed)

Advances in Applied Self-Organizing Systems

Contents

Fields of interest
Artificial Intelligence (incl. Robotics); Pattern Recognition; Simulation and Modeling

Target groups
Research

Product category
Contributed volume

L. Saitta, Università del Piemonte Orientale, Alessandria, Italy; J.-D. Zucker, Research Institute for Development (IRD), Bondy, France

Abstraction in Artificial Intelligence and Complex Systems

Abstraction is a fundamental mechanism underlying both human and artificial perception, representation of knowledge, reasoning and learning. This mechanism plays a crucial role in many disciplines, notably Computer Programming, Natural and Artificial Vision, Complex Systems, Artificial Intelligence and Machine Learning, Art, and Cognitive Sciences. This book first provides the reader with an overview of the notions of abstraction proposed in various disciplines by comparing both commonalities and differences.

Features
► Collects, describes and compares various approaches to abstraction proposed in the literature of various fields ► Discusses why abstraction plays a key role in AI artifacts, using concrete examples, such as cartographic generalization and human/robot interaction ► Provides a conceptual framework to design effective systems

Contents

Fields of interest
Artificial Intelligence (incl. Robotics); Image Processing and Computer Vision; Data Mining and Knowledge Discovery

Target groups
Research

Product category
Monograph

Due May 2013

Due July 2013

Due May 2013
A Survey of Core Research in Information Systems

The Information Systems (IS) discipline was founded on the intersection of computer science and organizational sciences, and produced a rich body of research on topics ranging from database design and the strategic role of IT to website design and online consumer behavior. In this book, the authors provide an introduction to the discipline, its development, and the structure of IS research, at a level that is appropriate for emerging and current IS scholars. Guided by a bibliometric study of all research articles published in eight premier IS research journals over a 20-year period, the authors identify and present the top 51 IS research topics. For each topic, they provide a brief overview, time trends, and references to related influential research works. The topics are organized into an IS research framework that includes research on the IT artifact and IS development, IT and organizations, IT and individuals, IT and markets, and IT for teamwork and collaboration.

Contents
Introduction.- The structure of IS research and IS discipline development.- IT artifact and IS development.- IT and Organizations.- IT and Individuals.- IT and Markets.- IT for Teamwork and collaboration.- Conclusion.

Fields of interest
Information Systems Applications (incl. Internet); Management of Computing and Information Systems

Target groups
Research

Product category
Brief

Due April 2013
2013. VIII, 114 p. 52 illus. (SpringerBriefs in Computer Science) Softcover
► $39.95
ISBN 978-1-4614-7157-8

R. Spence, M. Witkowski, Imperial College London, UK

Rapid Serial Visual Presentation

Design for Cognition

A powerful new image presentation technique has evolved over the last twenty years, and its value demonstrated through its support of many and varied common tasks. Conceptually, Rapid Serial Visual Presentation (RSVP) is basically simple, exemplified in the physical world by the rapid riffling of the pages of a book in order to locate a known image. Advances in computation and graphics processing allow RSVP to be applied flexibly and effectively to a huge variety of common tasks such as window shopping, video fast-forward and rewind, TV channel selection and product browsing.

Features
► Provides a clear description of RSVP and illustrates its many possible applications to tasks including e-commerce, video fast-forwarding and rewind, TV channel searching and news browsing► Offers guidance – based on empirical but persuasive evidence – to interaction designers interested in considering the application of RSVP within their products► Includes hitherto unpublished studies of gaze behaviour, clarifying this effect and providing evidence to trigger further research

Contents

Fields of interest
User Interfaces and Human Computer Interaction; Computer Applications; Visualization

Target groups
Research

Product category
Brief

Due April 2013
2013. IX, 106 p. 101 illus., 95 in color. (SpringerBriefs in Computer Science) Softcover
► $39.95
ISBN 978-1-4471-5084-8

Transportation and Information

Trends in Technology and Policy

Transformations in wireless connectivity and location-aware technologies hold the promise of bringing a sea-change in the way transportation information is generated and used in the future. Sensors in the transportation system, when integrated with those in other sectors (for example, energy, utility and health) have the potential to foster novel new ways of improving livability and sustainability. The end-result of these developments has been somewhat contradictory. Although automation in the transportation environment has become increasingly widespread, the level of involvement and active participation by people, in terms of co-creation and contribution of information, has also increased. As a result, the following two major trends have been observed: (1) increases in Machine-to- Machine (M2M) communications; and (2) increases in the variety and volume of User-Generated Content. In this transportation paradigm, the pervasive use of Information and Communication Technologies will serve as the foundation for mobility intelligence towards an "ubiquitous information-centered mobility environment".

Contents
Introduction.- Data Sources and Management.- Technology Systems for Transportation System Management and Personal Use.- Institutional and Policy Factors in ICT-Based Mobility Services.- Conclusions.

Fields of interest
Information Systems and Communication Service; Signal, Image and Speech Processing; Computers and Society

Target groups
Research

Product category
Brief

Due May 2013
2013. V, 125 p. 3 illus. (SpringerBriefs in Computer Science) Softcover
► $39.99
ISBN 978-1-4614-7128-8
Transactions on Aspect-Oriented Software Development X

Editor-in-chief: G. T. Leavens, University of Central Florida, Orlando, FL, USA; S. Chiba, The University of Tokyo, Japan; Guest editor: É. Tanter, University of Chile, Santiago, Chile

The LNCS journal Transactions on Aspect-Oriented Software Development is devoted to all facets of aspect-oriented software development (AOSD) techniques in the context of all phases of the software life cycle, from requirements and design to implementation, maintenance and evolution. The focus of the journal is on approaches for systematic identification, modularization, representation and composition of crosscutting concerns, i.e., the aspects and evaluation of such approaches and their impact on improving quality attributes of software systems.

Features

- Contains considerably extended versions of the best papers presented at AOSD 2012
- Presents the very latest results in Aspect-Oriented Software Development
- Covers a range of topics from debugging to distributed software architectures

Contents


Fields of interest

Software Engineering; Programming Languages, Compilers, Interpreters; Programming Techniques

Target groups

Research

Product category

Contributed volume

Z. Wu, G. Pan, Zhejiang University, Hangzhou, China

SmartShadow: Models and Methods for Pervasive Computing

SmartShadow: Models and Methods for Pervasive Computing offers a new perspective on pervasive computing with SmartShadow, which is designed to model a user as a personality “shadow” and to model pervasive computing environments as user-centric dynamic virtual personal spaces. Just like human beings’ shadows in the physical world, it follows people wherever they go, providing them with pervasive services. The model, methods, and software infrastructure for SmartShadow are presented and an application for smart cars is also introduced. The book can serve as a valuable reference work for researchers and graduate students in the field of pervasive/ubiquitous computing. Zhaohui Wu is a Professor at Zhejiang University, Hangzhou, China. Gang Pan is a Professor at the same institute.

Features

- Brings a new perspective of pervasive computing
- Presents the model, methods, and software infrastructure for SmartShadow
- Introduces an application in smart car

Contents

SmartShadow Model.- Task Migration in SmartShadow.- Context-Awareness in SmartShadow.- File Modeling in SmartShadow.- ScudWare: Software Infrastructure for SmartShadow.- Smart Car Space: An Application.

Fields of interest

Software Engineering; Computer Communication Networks; Information Systems and Communication Service

Target groups

Research

Product category

Monograph

Due May 2013

Jointly published with Zhejiang University Press, Hangzhou

Distribution rights in China: Zhejiang University Press, Hangzhou

2013. Approx. 130 p. 56 illus., 26 in color. (Advanced Topics in Science and Technology in China)

Hardcover

$109.00

ISBN 978-3-642-36381-8