**Fire Detection in Warehouse Facilities**

*Automatic sprinklers systems are the primary fire protection system in warehouse and storage facilities. The effectiveness of this strategy has come into question due to the challenges presented by modern warehouse facilities, including increased storage heights and areas, automated storage retrieval systems (ASRS), limitations on water supplies, and changes in firefighting strategies. The application of fire detection devices used to provide early warning and notification of incipient warehouse fire events is being considered as a component of modern warehouse fire protection. Fire Detection in Warehouse Facilities provides technical information to aid in the development of guidelines and standards for the use of fire detection technologies for modern warehouse fire protection. The authors share their thorough literature review, analyze characteristic fire hazards for modern warehouse facilities, and identify information gaps in the field. The book concludes with recommendations for the development of guidelines and standards for the use of detection technologies in warehouse fire protection design, including a research plan for implementation. This book is intended for practitioners seeking an understanding of the issues surrounding warehouse fire protection.*

**Contents**

- Background
- Objective
- Approach
- Literature Review
- Fire Hazard Analysis
- Research Plan
- References
- Bibliography of Additional Sources

**Features**

- Provides a comprehensive overview of the performance of peer-to-peer systems
- Details a clear benchmarking process, by which P2P systems may be compared
- Presents new results in the areas of performance modeling and analysis of peer-to-peer systems, and peer-to-peer applications, such as video streaming and games

**Available**

2013. VIII, 197 p. 57 illus. (Lecture Notes in Computer Science / Computer Communication Networks and Telecommunications, Volume 7847) Softcover

- € (D) 53.49 | € (A) 54.99 | sFr 67.00
- € 49.99 | £44.99

ISBN 978-3-642-38672-5

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**Guide to Programming and Algorithms Using R**

*This easy-to-follow textbook provides a student-friendly introduction to programming and algorithms. Emphasis is placed on the threshold concepts that present barriers to learning, including the questions that students are often too embarrassed to ask. The book promotes an active learning style in which a deeper understanding is gained from evaluating, questioning, and discussing the material, and practised in hands-on exercises. Although R is used as the language of choice for all programs, strict assumptions are avoided in the explanations in order for these to remain applicable to other programming languages.*

**Features**

- Simple, concise and easy-to-read, with many discussions on common mistakes and answers to questions students may be too embarrassed to ask
- Contains instructive practical exercises at the end of each chapter, together with a selection of mini-projects that students may enjoy while programming
- Provides R program code for lecturers and instructors at an associated website

**Available**

2013. XI, 184 p. 28 illus. Hardcover

- € (D) 42.79 | € (A) 43.99 | sFr 53.50
- € 39.99 | £35.99

ISBN 978-1-4471-5327-6
Vision-based Pedestrian Protection Systems for Intelligent Vehicles

Pedestrian Protection Systems (PPSs) are on-board systems aimed at detecting and tracking people in the surroundings of a vehicle in order to avoid potentially dangerous situations. These systems, together with other Advanced Driver Assistance Systems (ADAS) such as lane departure warning or adaptive cruise control, are one of the most promising ways to improve traffic safety. By the use of computer vision, cameras working either in the visible or infra-red spectra have been demonstrated as a reliable sensor to perform this task. Nevertheless, the variability of human’s appearance, not only in terms of clothing and sizes but also as a result of their dynamic shape, makes pedestrians one of the most complex classes even for computer vision. Moreover, the unstructured changing and unpredictable environment in which such on-board systems must work makes detection a difficult task to be carried out with the demanded robustness. In this brief, the state of the art in PPSs is introduced through the review of the most relevant papers of the last decade. A common computational architecture is presented as a framework to organize each method according to its main contribution.

Contents

A. Moreira, Universidade Nova de Lisboa, Caparica, Portugal; R. Chitchyan, J. Araujo, University of Leicester, UK; A. Rashid, Lancaster University, UK (Eds)

**Aspect-Oriented Requirements Engineering**

*Contents*
- Chapter 1: Aspect-Oriented Requirements Engineering - Section 1: Concern Identification in Requirements

**Fields of interest**
- Software Engineering; Management of Computing and Information Systems

**Target groups**
- Research

**Product category**
- Monograph

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G. O'Regan, SQC Consulting, Cork, Ireland

**Giants of Computing**

*A Compendium of Select, Pivotal Pioneers*

**Features**
- Provides an overview of a selection of individuals who have made important contributions to the field of computing field
- Presents the key contributions and brief biographical information on figures from a broad range of sub-disciplines and historical periods
- Highlights the richness of the field of computing, and the wealth of contributions made by historical and contemporary figures

**Contents**

**Fields of interest**
- History of Computing; History of Science; Artificial Intelligence (incl. Robotics)

**Target groups**
- Upper undergraduate

**Product category**
- Undergraduate textbook

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T. Rauber, University of Bayreuth, Germany; G. Rungér, Chemnitz University of Technology, Germany

**Parallel Programming for Multicore and Cluster Systems**

Innovations in hardware architecture, like multi-core or multicore processors, mean that parallel computing resources are available for inexpensive desktop computers. In only a few years, many standard software products will be based on concepts of parallel programming implemented on such hardware, and the range of applications will be much broader than that of scientific computing, up to now the main application area for parallel computing. Rauber and Rünger take up these recent developments in processor architecture by giving detailed descriptions of parallel programming techniques that are necessary for developing efficient programs for multicores as well as for parallel cluster systems and supercomputers.

**Features**
- Broad coverage of all aspects of parallel programming
- Special emphasis on runtime efficiency and memory organization
- Presented material has been used in courses for many years
- Complemented by many examples and an additional website with teaching material

**Contents**

**Fields of interest**
- Programming Techniques; Computer Communication Networks; Computational Science and Engineering

**Target groups**
- Upper undergraduate

**Product category**
- Graduate/Advanced undergraduate textbook

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Due August 2013

2013. XII, 336 p. Hardcover
- € (D) 101.64 | € (A) 104.49 | sFr 126.50
- £ 94.99 | £ 85.50
ISBN 978-3-642-38639-8

Due July 2013

2013. XX, 314 p. 113 illus., 57 in color. Hardcover
- € (D) 42.79 | € (A) 43.99 | sFr 53.50
- £ 39.99 | £ 35.99
ISBN 978-3-642-4471-5339-9

Due June 2013

2nd ed. 2013. XIII, 516 p. 178 illus. Hardcover
- € (D) 58.84 | € (A) 60.49 | sFr 73.50
- £ 54.99 | £ 49.99
ISBN 978-3-642-37800-3
Resource Management for Device-to-Device Underlay Communication

Device-to-Device (D2D) communication will become a key feature supported by next generation cellular networks, a topic of enormous importance to modern communication. Currently, D2D serves as an underlay to the cellular network as a means to increase spectral efficiency. Although D2D communication brings large benefits in terms of system capacity, it also causes interference as well as increased computation complexity to cellular networks as a result of spectrum sharing. Thus, efficient resource management must be performed to guarantee a target performance level of cellular communication. This brief presents the state-of-the-art research on resource management for D2D communication underlaying cellular networks. Those who work with D2D communication will use this book’s information to help ensure their work is as efficient as possible. Along with the survey of existing work, this book also includes the fundamental theories, key techniques, and applications.

Contents

Fields of interest
Computer Communication Networks; Communication Networks; Data Encryption

Target groups
Research

Product category
Brief

Measuring SIP Proxy Server Performance

Internet Protocol (IP) telephony is an alternative to the traditional Public Switched Telephone Networks (PSTN), and the Session Initiation Protocol (SIP) is quickly becoming a popular signaling protocol for VoIP-based applications. SIP is a peer-to-peer multimedia signaling protocol standardized by the Internet Engineering Task Force (IETF), and it plays a vital role in providing IP telephony services through its use of the SIP Proxy Server (SPS), a software application that provides call routing services by parsing and forwarding all the incoming SIP packets in an IP telephony network.

Features
► Proposes new models for the implementation of SIP proxy servers that greatly improve their performance and scale. ► Highlights applications for session-initiation protocol for video and streaming technologies. ► Presents real-world industrial case studies that can be used as a benchmark for close comparisons and further optimizations.

Contents

Fields of interest
Computer Communication Networks; Communication Engineering, Networks; Information Systems and Communication Service

Target groups
Research

Product category
Monograph

Trustworthy Execution on Mobile Devices

This brief considers the various stakeholders in today’s mobile device ecosystem, and analyzes why widely-deployed hardware security primitives on mobile device platforms are inaccessible to application developers and end-users. Existing proposals are also evaluated for leveraging such primitives, and proves that they can indeed strengthen the security properties available to applications and users, without reducing the properties currently enjoyed by OEMs and network carriers. Finally, this brief makes recommendations for future research that may yield practical and deployable results.

Contents

Fields of interest
Systems and Data Security; Computer Communication Networks; Data Encryption

Target groups
Research

Product category
Brief
S. Wagner, University of Stuttgart, Germany

Software Product Quality Control

Quality is not a fixed or universal property of software; it depends on the context and goals of its stakeholders. Hence, when you want to develop a high-quality software system, the first step must be a clear and precise specification of quality. Yet even if you get it right and complete, you can be sure that it will become invalid over time. So the only solution is continuous quality control: the steady and explicit evaluation of a product’s properties with respect to its updated quality goals. This book guides you in setting up and running continuous quality control in your environment. Starting with a general introduction on the notion of quality, it elaborates what the differences between process and product quality are and provides definitions for quality-related terms often used without the required level of precision. On this basis, the work then discusses quality models as the foundation of quality control, explaining how to plan desired product qualities and how to ensure they are delivered throughout the entire lifecycle. Next it presents the main concepts and techniques of continuous quality control, discussing the quality control loop and its main techniques such as reviews or testing.

Features
- Presents a state-of-the-art quality model for continuous software quality control
- Illustrates the application of techniques and methodologies using numerous real-world examples
- Enhanced by numerous checklists and commented suggestions for further reading
- Based on more than ten years of consulting experience for blue chip companies

Fields of interest
Software Engineering; Management of Computing and Information Systems; Quality Control, Reliability, Safety and Risk

Target groups
Professional/practitioner

Product category
Professional book

R. Weller, University of Bremen, Germany

New Geometric Data Structures for Collision Detection and Haptics

Starting with novel algorithms for optimally updating bounding volume hierarchies of objects undergoing arbitrary deformations, the author presents a new data structure that allows, for the first time, the computation of the penetration volume. The penetration volume is related to the water displacement of the overlapping region, and thus corresponds to a physically motivated and continuous force. The practicability of the approaches used is shown by realizing new applications in the field of robotics and haptics, including a user study that evaluates the influence of the degrees of freedom in complex haptic interactions.

Features
- State of the art review of the current data structures for collision detection
- Features a novel geometric data structure for collision detection at haptic rates between arbitrary rigid objects
- Presents new applications based on the latest research

Contents

Fields of interest
Simulation and Modeling; Algorithms; User Interfaces and Human Computer Interaction

Target groups
Research

Product category
Monograph

B. Zhao, B. C. Tak, G. Cao, The Pennsylvania State University, PA, USA

Mobile Web Browsing Using the Cloud

This brief surveys existing techniques to address the problem of long delays and high power consumption for web browsing on smartphones, which can be due to the local computational limitation at the smartphone (e.g., running java scripts or flash objects) level. To address this issue, an architecture called Virtual-Machine based Proxy (VMP) is introduced, shifting the computing from smartphones to the VMP which may reside in the cloud. Mobile Web Browsing Using the Cloud illustrates the feasibility of deploying the proposed VMP system in 3G networks through a prototype using Xen virtual machines (in cloud) and Android Phones with ATT UMTS network. Techniques to address scalability issues, resource management techniques to optimize the performance of the VMs on the proxy side, compression techniques to further reduce the bandwidth consumption, and adaptation techniques to address poor network conditions on the smartphone are also included.

Contents

Fields of interest
Computer Communication Networks; Communications Engineering, Networks

Target groups
Research

Product category
Brief