A Graph-Theoretic Approach to Enterprise Network Dynamics, Horst Bunke, Peter J. Dickenson, Miro Kraetzl, and Walter D. Wallis. Networks have become nearly ubiquitous and increasingly complex, and their support of modern enterprise environments has become fundamental. Accordingly, robust network management techniques are essential to ensure optimal performance. This monograph applies numerous graph-theoretic algorithms to make a comprehensive analysis of dynamic enterprise networks.

Organized into four relatively independent parts, the book provides an introduction and overview of typical enterprise networks and the graph-theoretical prerequisites for all algorithms introduced later, an in-depth treatise of usage of various graph distances for event detection, a detailed exploration of properties of underlying graphs with modeling applications, and a theoretical and applied treatment of network behavior inferencing and forecasting using sequences of graphs.

Birkhäuser; www.birkhauser.com; 0-8176-4485-7; 225 pp.

Workflows for e-Science: Scientific Workflows for Grids, Ian J. Taylor, Ewa Deelman, Dennis B. Gannon, and Matthew Shields, eds. Scientific workflow has seen massive growth in recent years as science becomes increasingly reliant on the analysis of massive data sets and the use of distributed resources. The workflow programming paradigm offers a means of managing the complexity in defining the analysis, executing the necessary computations on distributed resources, collecting information about the analysis results, and providing means to record and reproduce the scientific analysis.

This book brings together research from many leading computer scientists in the workflow area and provides real-world examples from domain scientists actively involved in e-Science. The computer science topics addressed provide a broad overview of active research that focuses on the areas of workflow representations and process models, component and service-based workflows, standardization efforts, workflow frameworks and tools, and problem-solving environments and portals.

Springer; www.springeronline.com; 1-84628-519-4; 530 pp.

Computer Security and Cryptography, Alan G. Konheim. This book updates readers on all the tools, techniques, and concepts needed to understand and implement data security systems. It presents a wide range of topics for a thorough understanding of the factors that affect the efficiency of secrecy, authentication, and digital signature schema. Most importantly, readers gain hands-on experience in cryptanalysis and learn how to create effective cryptographic systems.

The book’s three basic chapter types facilitate learning: those that develop technical skills, those that describe a cryptosystem and present a method of analysis, and those that describe a cryptosystem. They also provide problems to test readers’ grasp of the material and their ability to implement practical solutions.

With consumers becoming increasingly wary of identity theft, and with companies struggling to develop safe, secure systems, this book provides essential reading for professionals in e-commerce and information technology. Written by a professor who teaches cryptography, it is also ideal for students.


Mathematics of Digital Images: Creation, Compression, Restoration, Recognition, S. G. Hogger. Compression, restoration, and recognition are three key digital imaging components. This book explains the mathematics needed to understand and carry out these components in a style at once rigorous and practical, with many worked examples, exercises and solutions, pseudocode, and sample calculations on images.

The introduction lists fast tracks to special topics such as principal component analysis. The book starts with descriptions of plane geometry and pattern-generating symmetries. Subsequent chapters cover vectors, matrices, and probability as applied to simulation, Bayesian methods, Shannon’s information theory, compression, filtering, and tomography.

Cambridge University Press; www.cambridge.org; 0-521-78029-2; 854 pp.

Foundations of Jini 2 Programming, Jan Newmarch. Jini, Sun’s Java-based technology, has the potential to make transparent “universal plug and play” a reality. This book, based on Jini 2.0, offers an expanded, updated version of the most popular online tutorial for Jini.

The author covers comprehensive Jini advancements as well as other important concepts like how Enterprise JavaBeans blend in with the Jini framework and how CORBA fits in as well. This book contains revised chapters as well as several new ones. New topics include Jeri, Config, Logging, ServiceStater, and advanced security.


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