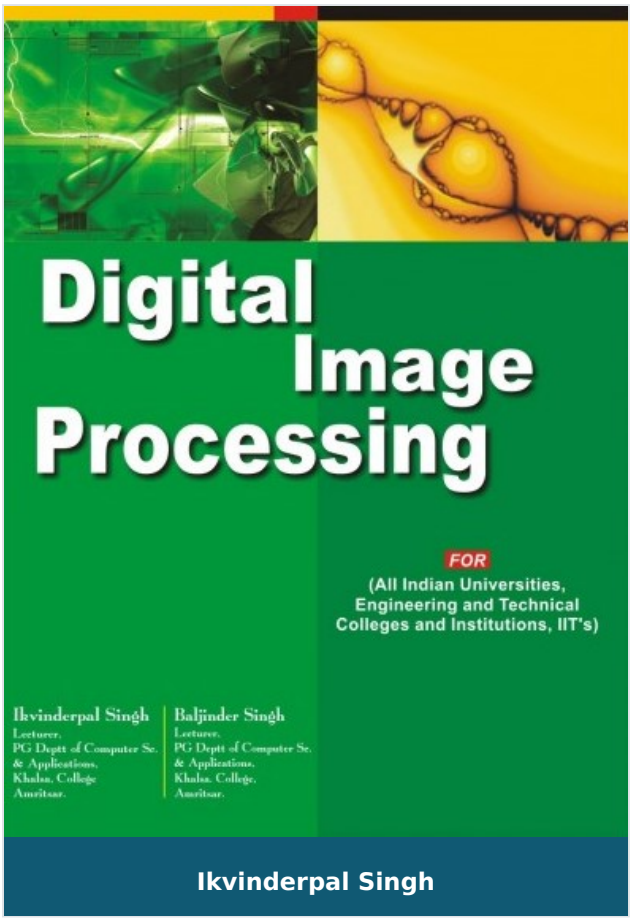

Digital Image Processing

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Product Description

This book is written keeping in mind a beginner. This volume offers an exceptionally clear and thorough introduction to image processing at an elementary level. It provides the clear survey of basic fundamentals of image processing and various image processing techniques. In it, we emphasize mathematical analysis of image signal representation. hardware architecture for image processing and practical engineering problems in picture data archival, computer vision and medical imaging.

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- Background
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- Image Signal Representation
- Image Enhancement
- Image Restoration
- Image Feature Extraction
- Image Data Compression and Statistical Pattern Recognition
- Hardware Architecture for Image Processing
- Techniques of Color Image Processing
- Applications of Image Processing

Author

Ikvinderpal Singh

Dr. Ikvinderpal Singh is an Assistant Professor at Trai Shatabdi Guru Gobind Singh Khalsa college Amritsar, bringing 17+ years of academic leadership and research experience to the field of computer science. A Gold Medalist in B.Sc. IT, with an MCA (Distinction) and a Ph.D. in Neural Networks and Image Processing, he is known for blending rigorous research with practical innovation. A prolific academic creator, he has authored 37 books, published 82+ research papers, and designed 100+ industry-aligned skill-development courses. His expertise extends to doctoral evaluation, supervision, and active participation on 100+ editorial and review boards worldwide.

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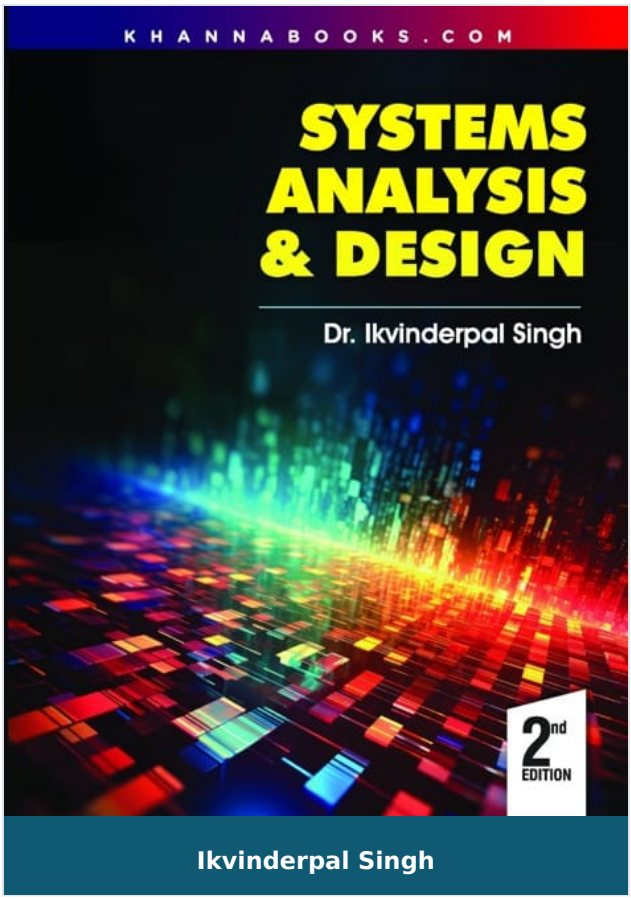

Ikvinderpal Singh

Systems Analysis and Design

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Product Description

Systems analysis and design (SAD) in an exciting, active field in which analysts continually learn new techniques and approaches to develop systems more effectively and efficiently. However, there is a core set of skills that all analysts need to know no matter what approach or methodology is used. All information system projects move through the five phases of planning, analysis, design, implementation and maintenance; all projects require analysts to gather requirements, model the business needs, and create blueprints for how the system should be built; and all projects require an understanding of organizational behavior concepts like change management and team building. This book captures the dynamic aspects of the field by keeping students focused on doing SAD while presenting the core set of skills that we feel every systems analyst needs to know today and in the future. It also builds on our professional experience as systems analysts and on our experience in teaching SAD in the classroom.

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- System Design:Structured Approach
- Object-Oriented Design
- User-Interface Design
- Coding & Documentation
- System Testing
- System Testing Strategies
- System Quality
- System Maintenance & Supports Users

Author

Ikvinderpal Singh

Dr. Ikvinderpal Singh is an Assistant Professor at Trai Shatabdi Guru Gobind Singh Khalsa college Amritsar, bringing 17+ years of academic leadership and research experience to the field of computer science. A Gold Medalist in B.Sc. IT, with an MCA (Distinction) and a Ph.D. in Neural Networks and Image Processing, he is known for blending rigorous

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research with practical innovation. A prolific academic creator, he has authored 37 books, published 82+ research papers, and designed 100+ industry-aligned skill-development courses. His expertise extends to doctoral evaluation, supervision, and active participation on 100+ editorial and review boards worldwide.

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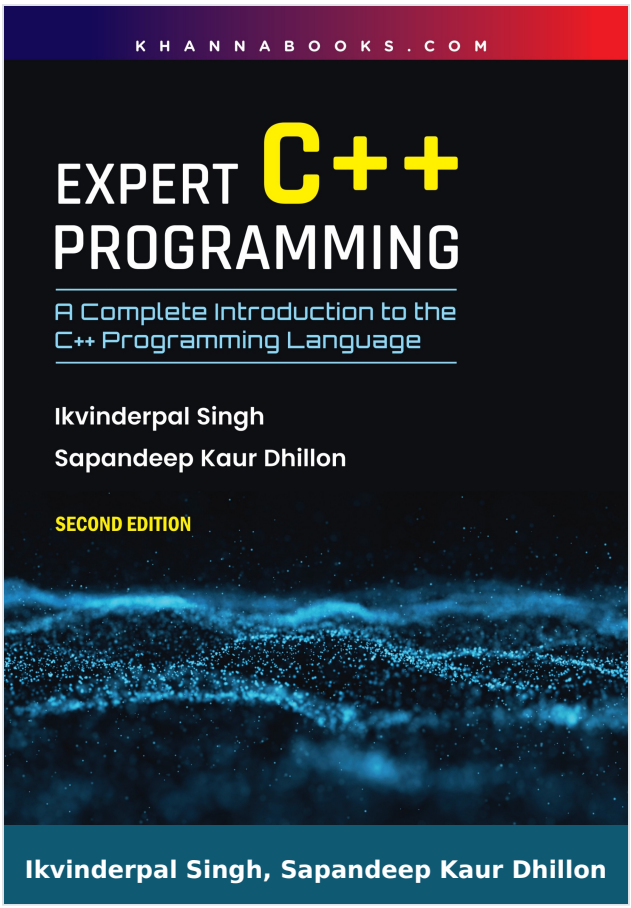

Expert C++ Programming

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Product Description

Written with the beginner in mind, this book provides an exceptionally clear and precise detail of c++ programming. Its approach is explanatory and language is lucid and communicable. Each and every concept described with the help of its pictorial representation, examples, and solved programming to have clear ideas. Each chapter contains programming problems, objective type questions, and exercises. This book will be useful for student of BE(Computer/Electronics), B. tech, ME(Computer/Electronics), M. Tech, MCA, BCA, M.Sc., B.Sc., and also to students pursuing A/B/C-level Course of DOEACC.

Salient Features

- Detailed description to object-oriented programming and its features. It also includes evolution of C++ in detail.
- Complete introduction to C++ programming including basic structure is given in detail. Extensive coverage of constants, variables, various data types are given in detail.
- Various types of operators and expressions are described with the help of examples and simple programs.
- Demonstrates the description of console I/O statements in a lucid manner.
- Each and every control statement is described with the help of flowcharts and simple programs.
- Includes numerous illustrative examples to understand the topic easily.
- Demonstrates every program in a good programming style.
- Around 500 solved C++ programs are included.
- Around 300 objective type questions are included.
- Gives detailed description of arrays, strings and functions in lucid manner.

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- Covers all concepts of array, pointers like array and pointer, function and pointer, dynamic memory allocation in detail. It also includes concept of structure and union.
- Covers all concepts of classes and constructor in a lucid manner, it also covers operator overloading; each and every operator is overloaded using programming techniques.
- All types of inheritance and polymorphism are given in detail with new concepts like virtual inheritance, aggregation, composition, virtual function, object slicing etc.
- Covers different special functions like inline, friend, static, const, volatile etc. with the help of examples and simple programs.
- Presents various streams and files operations like open (), close (), seek (), reading and writing a file, working with streams etc.

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- More About Classes
- Operator Overloading
- Inheritance
- Polymorphism and Virtual Function
- Exploring Special Functions
- C++ Streams and Files
- Templates
- Exception Handling
- Standard Template Library and Namespaces

Author

Ikvinderpal Singh

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Dr. Ikvinderpal Singh is an Assistant Professor at Trai Shatabdi Guru Gobind Singh Khalsa college Amritsar, bringing 17+ years of academic leadership and research experience to the field of computer science. A Gold Medalist in B.Sc. IT, with an MCA (Distinction) and a Ph.D. in Neural Networks and Image Processing, he is known for blending rigorous research with practical innovation. A prolific academic creator, he has authored 37 books, published 82+ research papers, and designed 100+ industry-aligned skill-development courses. His expertise extends to doctoral evaluation, supervision, and active participation on 100+ editorial and review boards worldwide.

Sapandeep Kaur Dhillon

Sapandeep Kaur Dhillon is an assistant professor in the department of computer science, Guru Nanak Dev University, Amritsar, bringing 12+ years of dedicated academic experience to the discipline. She has authored 4 books, published 10+ research papers across national and international journals, reflecting her steady engagement with emerging trends in computing. Her academic interests span data structures, Compiler Design, and Artificial Intelligence, where she integrates foundational theory with practical, algorithmic thinking.

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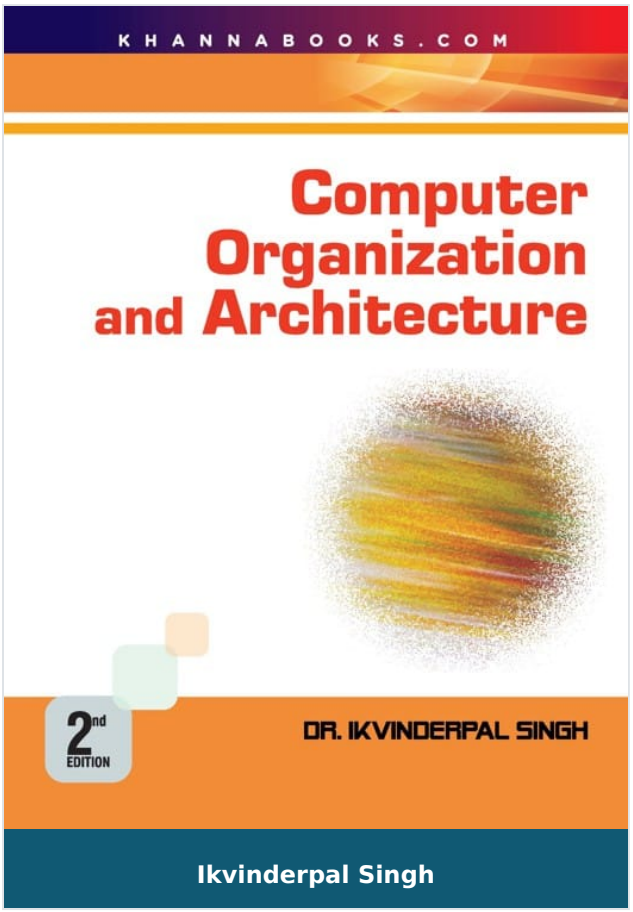

Computer Organization and Architecture

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Product Description

The title of our book, computer organization and architecture, is intended to convey that the topics presented in the text are those for which every Computer science major should have exposure, familiarity, or mastery. We do not expect students using our textbook to have complete mastery of all topics presented. it is our firm belief, however that there the certain topics that must be mastered; there are those topics for which students must have a definite familiarity; and there are certain topics for which a brief introduction and exposure are adequate. We feel our explanations, examples and exercises all combine to provide the student with a total learning experience that exposes the inner workings of a modern digital computer at the appropriate level. Like most books, we have chosen an architectural model, but it is one that we have designed with simplicity in mind.

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- Register Transfer Language
- Computer Organization and design
- Assembly Language
- Control Unit
- Central Processing Unit
- Central Processing Unit
- Pipeline and Vector Processing
- Input-Output Organization
- Memory System Design
- Introduction to Multiprocessors

Author

Ikvinderpal Singh

Dr. Ikvinderpal Singh is an Assistant Professor at Trai Shatabdi Guru Gobind Singh Khalsa college Amritsar, bringing 17+ years of academic leadership and research experience to the field of computer science. A Gold Medalist in B.Sc. IT, with an MCA (Distinction) and a Ph.D. in Neural Networks and Image Processing, he is known for blending rigorous research with practical innovation. A prolific academic creator, he has authored 37 books, published 82+ research papers, and designed 100+ industry-aligned skill-development

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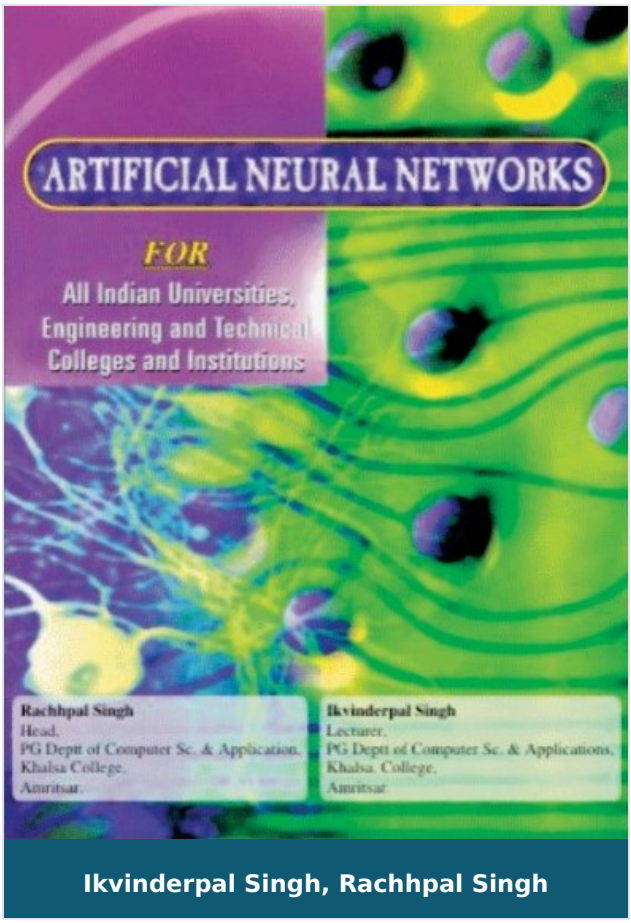

Ikvinderpal Singh, Rachhpal Singh

Artificial Neural Networks

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Product Description

Written with the beginner in mind, this volume offers an exceptionally clear and thorough introduction to neural network at an elementary level. It provides the clear survey of basic neural network architectures and learning rules. In it, We emphasize mathematical analysis of networks, methods for training network, and application of neural network to practical engineering problems in speech recognition, stock market prediction and pattern recognition.

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- Fundamentals of Neural Networks
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- Backpropagation
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- Supervised and Unsupervised Learning
- Counter-propagation Network
- Adaptive Resonance Theory
- Neocognitron
- Bidirectional Associative Memory
- Case Studies

Author

Ikvinderpal Singh

Dr. Ikvinderpal Singh is an Assistant Professor at Trai Shatabdi Guru Gobind Singh Khalsa college Amritsar, bringing 17+ years of academic leadership and research experience to the field of computer science. A Gold Medalist in B.Sc. IT, with an MCA (Distinction) and a Ph.D. in Neural Networks and Image Processing, he is known for blending rigorous research with practical innovation. A prolific academic creator, he has authored 37 books, published 82+ research papers, and designed 100+ industry-aligned skill-development courses. His expertise extends to doctoral evaluation, supervision, and active participation on 100+ editorial and review boards worldwide.

Rachhpal Singh

Rachhpal Singh is head of P.G. Dept. Computer Science & Applications, Khalsa College, Amritsar which is a premier institute in North India. He obtained his MCA from thapar

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Institute of Engineering and Technology, patiala. He has over fifteen years of teaching experience to teach post graduate classes. He is an international author of the world level and his other areas of interest include software engineering, parallel processing system level programming.

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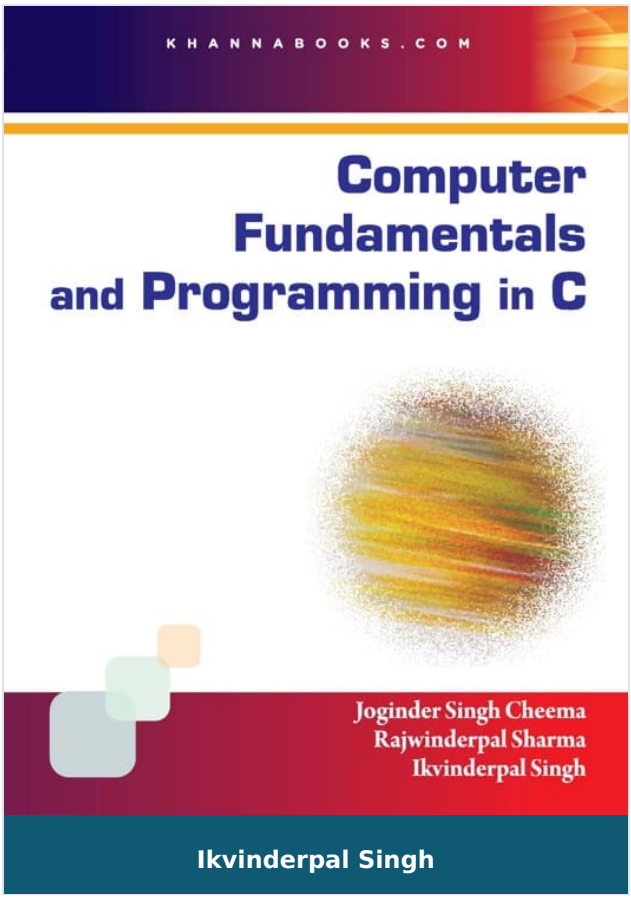

Computer Fundamentals & Programming in C

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Product Description

Explains the introduction to computers, history of computer, computer generations, classification of computers and applications of computer in corporate environment. Presents the basic organization of a computer system and its internal working. Describes the concept of number systems, computer codes and arithmetic, logic gates and Boolean algebra. Introduces the concept of primary and secondary storage. Explains the concept of different input and output devices. Presents the concept of computer software's and programming languages. Deals with commonly used various tools for planning the computer program like algorithm, flowcharts, pseudo code and decision tables. Complete introduction to C Programming including basic structure is given in detail. Extensive coverage of constants, variables, various data types are given in detail. Various types of operators and expressions are described with the help of examples and simple programs. Demonstrates the description of console I/O statements in a lucid manner. Each and every control statement is described with the help of flowcharts and simple programs. Includes numerous illustrative examples to understand the topic easily. Demonstrate every program in a good programming style. Around 200 numerous solved C Programs ans 100 objective type questions are included. Contains numerous theory exercises at the last of each chapter. Gives detailed description of arrays, strings and functions in lucid manner. Covers all concepts of pointers like array and pointer, function and pointer, dynamic memory allocation in detail. Detailed analysis of each and every storage class is covered with the help of programming examples. Detailed description to the concept of structures and unions.

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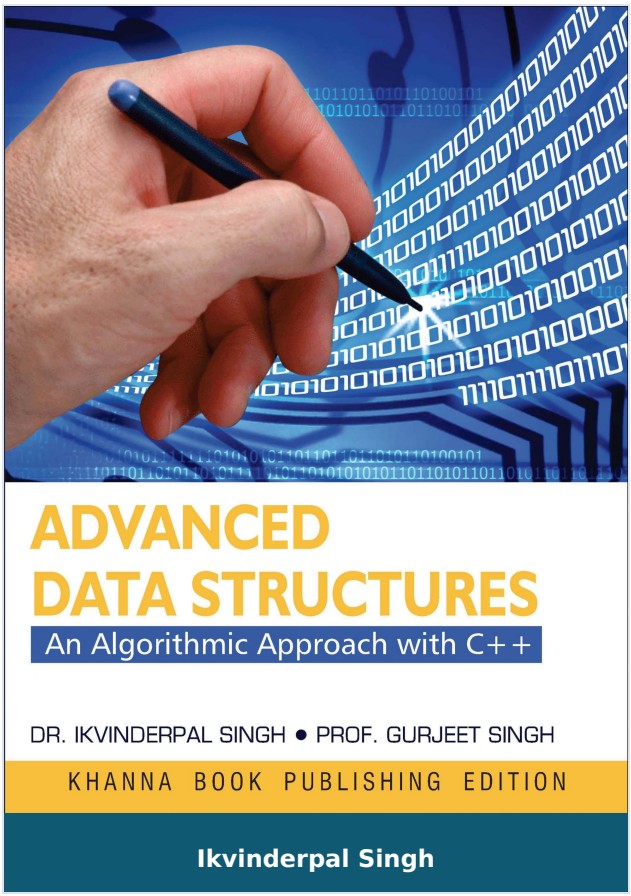

Advanced Data Structures

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Product Description

Each chapter begins with an outline an overview, and a list of learning objective. Extensive coverage of data Structure basics, pictorial representation of each and every Data Structures in given in detail. Covers all tree structures like binary tree, binary search trees, AVL, B+-tree and red black trees in detail. Brief introduction to binary heaps, heap operations, specifications, implementation and applications is covered. Demonstration the development of algorithms is a lucid manner. Includes numbers illustrative examples to understand the topic easily. Demonstrates the implementation of algorithms in a good programming style. Diagrams are used extensively throughout the text. Contains numerous theory questions at the last of each chapter. Gives detailed description of advanced head structures, priority queue operations, and double ended priority queues in lucid manner. Includes the concepts like dictionaries, binomial heaps, Fibonacci heaps. Data structures for disjoint sets, tables and table operations. Gives detailed description of amortized analysis, starting matching, and graph algorithms. Detailed analysis of each and every sorting and searching technique is covered with the help of programming examples. Presents various external data structures-external storage, external files, external sorting searching indexing files, external hashing. Brief introduction to the concept of file and storage management.

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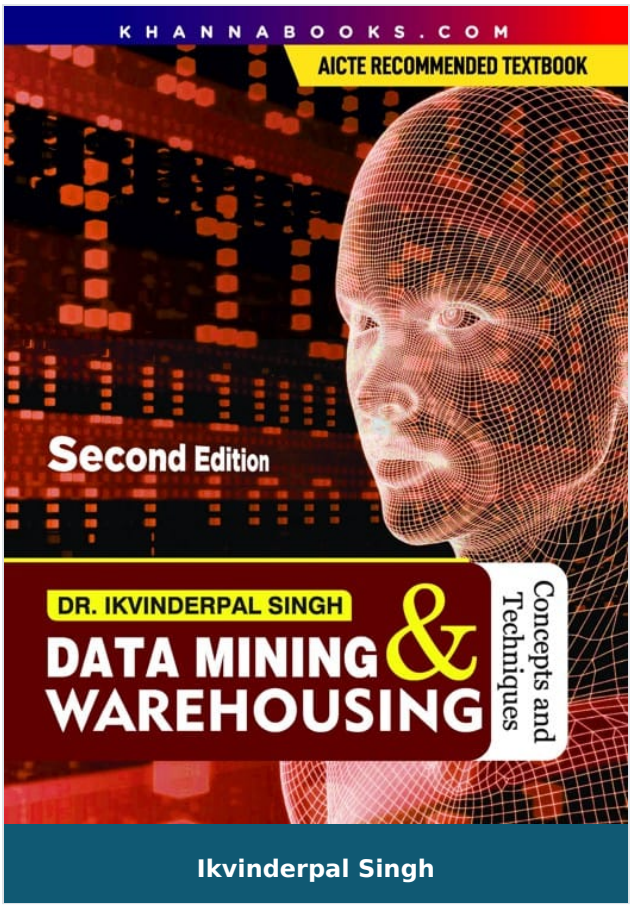

Data Mining & Warehousing

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Product Description

This book has numerous features that make it a winner, The order of topics is very logical, The choice of topics is quite appropriate for a comprehensive introductory book. The subject matter is logically structured, with chapters covering essential components of the data mining and warehousing field. The sequence of topics is well planned to provide a seamless transition from design to implementation. Within each chapter, the continuity of topics is excellent. The figures appropriately enhance and amplify the topics. The exercises can be found at the end of each chapter.

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- Online Analytical Processing
- Data Warehouse Implementation
- Data Warehouse Back-End tools And Utilities
- Data Mining
- Applications And Trends In Data Mining

Author

Ikvinderpal Singh

Dr. Ikvinderpal Singh is an Assistant Professor at Trai Shatabdi Guru Gobind Singh Khalsa college Amritsar, bringing 17+ years of academic leadership and research experience to the field of computer science. A Gold Medalist in B.Sc. IT, with an MCA (Distinction) and a Ph.D. in Neural Networks and Image Processing, he is known for blending rigorous research with practical innovation. A prolific academic creator, he has authored 37 books, published 82+ research papers, and designed 100+ industry-aligned skill-development courses. His expertise extends to doctoral evaluation, supervision, and active participation on 100+ editorial and review boards worldwide.

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