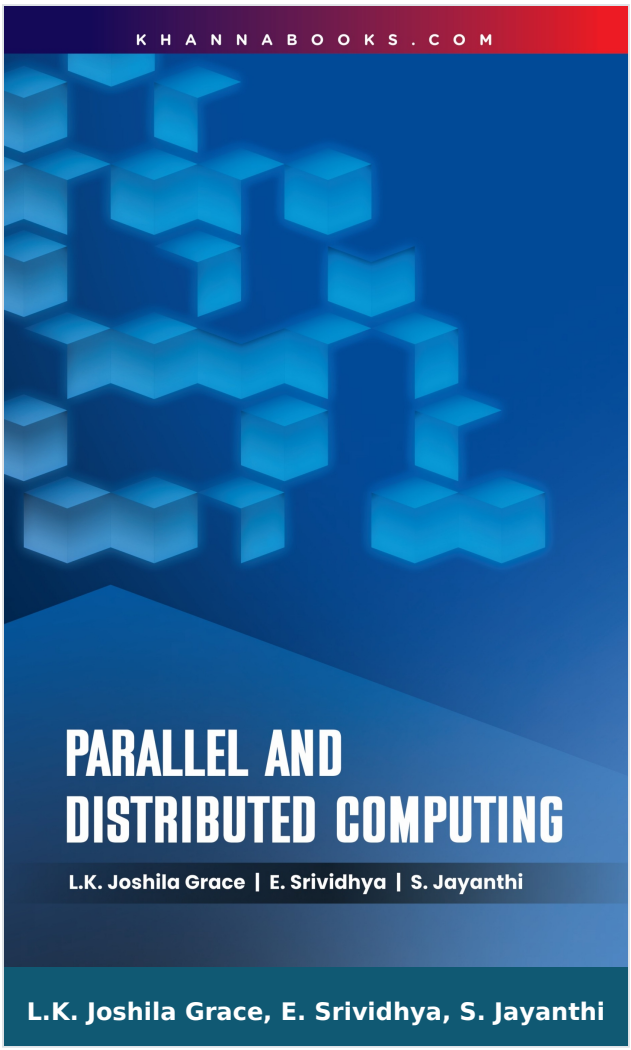

Parallel and Distributed Computing

Author :	L.K. Joshila Grace, E. Srividhya, S. Jayanthi
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Product Description

The rapid growth in data processing and the increasing complexity of computational problems have made Parallel and Distributed Computing (PDC) an essential field in modern technology. This book serves as a comprehensive and authoritative guide, providing both the theoretical foundations and practical insights required to master this evolving domain. It systematically explores how systems can execute multiple tasks simultaneously, fundamentally improving speed, efficiency, and resource utilization. The core theme is the detailed exposition of PDC principles, architectures, and applications, starting with the motivations for parallelism and modifications to the traditional von Neumann model. It offers a deep dive into parallel hardware like SIMD and MIMD systems, advanced architectures such as CMPs and GPUs, and crucial concepts like cache coherence and OpenCL programming. The book then transitions to distributed computing, covering critical areas like communication models, synchronization, deadlock handling, and distributed file systems and shared memory. With its structured five-unit approach, real-world applications, and problem-solving exercises, this resource is designed to equip a broad target audience—including students, researchers, and professionals—with the necessary knowledge to design and implement efficient, scalable systems. Mastering the concepts presented herein will be instrumental in shaping the future of high-performance computing.

Salient Features:

• Fundamental Architectures: Provides comprehensive coverage of parallel hardware, including Flynn’s taxonomy (SIMD/MIMD), cache coherence, and the evolution of modern architectures like CMPs and GPUs.

• Advanced Programming Models: Detailed exploration of key models of parallelism such as the PRAM and CTA models, alongside an essential introduction to OpenCL for heterogeneous parallel computing.

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• Interconnection Networks: Focuses on the crucial role of interconnection networks in parallel and distributed systems. It discusses both static and dynamic approaches to ensure high-speed and efficient communication among all processors.

• Distributed Communication: Covers essential goals, design issues, and models like the Client-Server Model. Includes in-depth topics such as Remote Procedure Calls (RPC) and Group Communication mechanisms.

• Synchronization & Control: Offers an in-depth analysis of synchronization algorithms, deadlock handling, and distributed scheduling techniques for effective resource and process management in multi-node systems.

• Memory Management Systems: Dedicated units on Distributed File Systems (DFS) design, implementation, and an introduction to shared memory consistency models, including a MACH system case study.

• Performance Optimization: Addresses practical considerations for performance, including floating-point precision, parallel reduction techniques, and managing common caveats like overhead and over-parallelization.

• Real-World Applications: Explores the wide scope of PDC, with applications in scientific simulations, AI, big data analytics, bioinformatics, and commercial systems like web and database services.

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Table Of Contents

- Introduction to Parallel Computing
- Architectures and Programming
- Communication in Distributed Computing
- Synchronization and Process in Distributed System
- Distributed File Systems and Shared Memory

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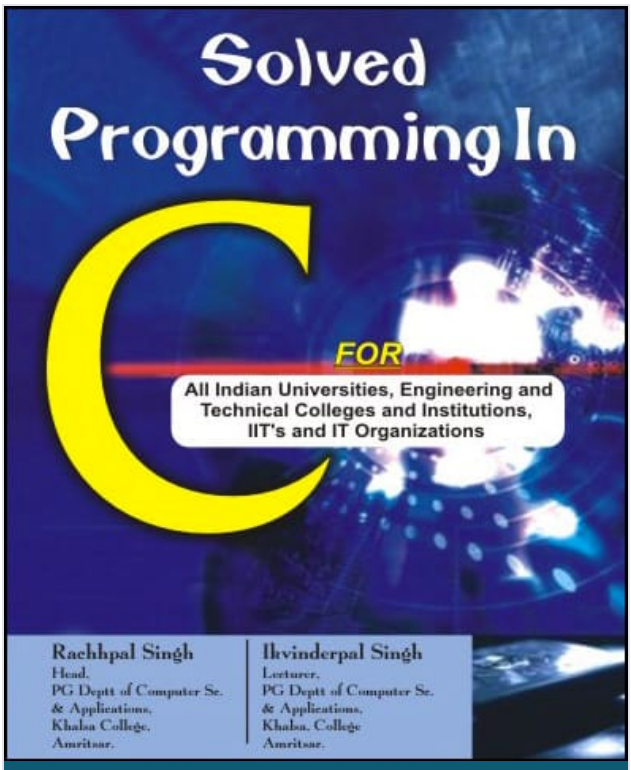

Ikvinderpal Singh, Rachhpal Singh

Solved Programming in C

Author :	Ikvinderpal Singh, Rachhpal Singh
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Condition Type :	New
Country Origin :	India

Product Description

This book blends concepts with real practical applications. Simple and lucid style trains the reader not only in developing application programs but also familiarizes with system level programming. Contains about 1600 solved simple as well as complex programming problems. Include real life solved examples. Contains program regarding all header files functions used in C programming like studies math etc. All macro functions are covered with suitable programs macro basic, macro constant, macro string etc. Contain all data types programming descriptions. All operations are explaining in the form of simple programs. It covers all function of console I/O and file I/O. Control statements, array, strings, functions, pointers, dynamic memory allocation is described using simple as well as system level programming. Containing graphic programming.

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- Getting Started With C
- All Data Types
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- Control Statements
- Array
- Strings
- Functions
- Pointers
- Dynamic Memory Allocation
- Structure and Union
- Files
- Macros in C
- Header Files in C
- Graphics Programming

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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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 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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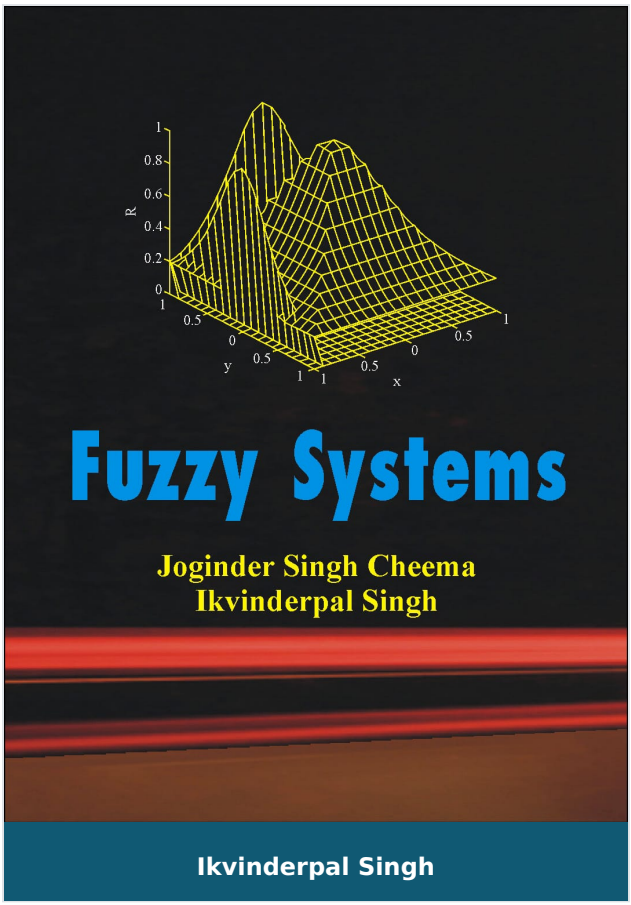

Fuzzy Systems

Author :	Ikvinderpal Singh
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E-ISBN 13 :	978-93-80016-49-8
Edition :	1
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Product Description

This book is meant for a wide range of readers, especially college and university students wishing to learn basic as well as advanced processes and techniques in Fuzzy systems. It can also be meant for programmers who may be involved in programming based on the Fuzzy system applications. Modern aspects of fuzzy systems have been introduced from the first principles and discussed in an easy manner. So that a beginner can grasp the concepts of Fuzzy logic, fuzzy sets, fuzzy relations, fuzzy reasoning, fuzzy probability, fuzzy expert systems etc. each chapter contains solved example problems and exercise problems.

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- Fuzzy If-then Rules
- Applications of Fuzzy Logic
- Neuro-Fuzzy Systems
- Genetic Algorithm
- Fuzzy Logic and Probability Theory
- Fuzzy Logic and Probability Theory
- Fuzzy Model Identification
- Fuzzy Logic in Database and Information Systems
- Fuzzy Logic and Artificial Intelligence
- Fuzzy Logic and Pattern Recognition

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

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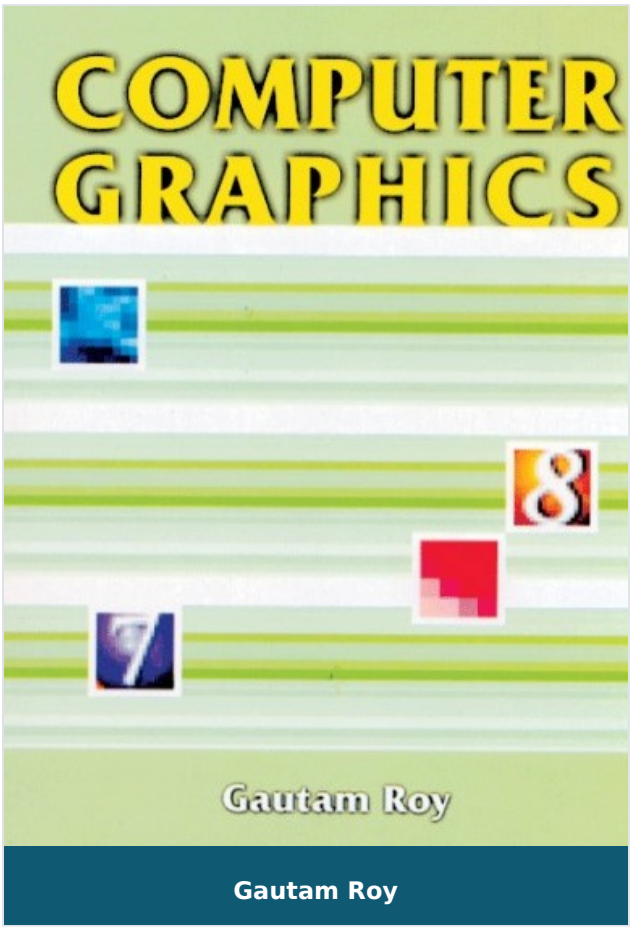

Gautam Roy

Computer Graphics

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Product Description

This book is basically made for the B.E. and M.C.A. level of students thought it will be immense helpful for all- who want to learn the subject computer graphics as a whole. The book covers the complete area of computer graphics, especially on the theories and application parts related to real life problems and their corresponding operation procedures. The book consists of more than 100 ready to use examples, ample number of related figures and sketches to supplement the theories have also been incorporated. The theories and examples are illustrated with a very lucid and easy to understand language which will be of immense helpful to the readers, students in particular. This book will not only be helpful to the students of computer graphics, but it will also help all the students and professionals who want to learn computer graphics and its multifaceted uses.

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Table Of Contents

- Introduction to Computer Graphics
- Elementary Drawing Algorithms
- Transformation
- Three Dimensional Graphics System
- Graphics Application Area
- Programming Examples

Author

Gautam Roy

Dr. Gautam Roy obtained his B.E.E., M.E.E and Ph.D. degrees from Jadavpur University, Kolkata and was awardered the foreign fellowship to work abroad. He was attached with different hardware and software consultancy jobs and acted as senior faculty members to different reputed institutes like Institution of Engineers, The Institute of Computer Engineers (India), St. Xavier's College Computer Centre, Rabindra Bharati University Computer Centre, Institute of Modern Management and many others and was actively attached in the field of education for nearly two decades. he was also a paper setter and examiner of different universities and professional examinations. Currently Dr. Roy is working as Senior Scientist in the field of computer applications in a government research laboratory.

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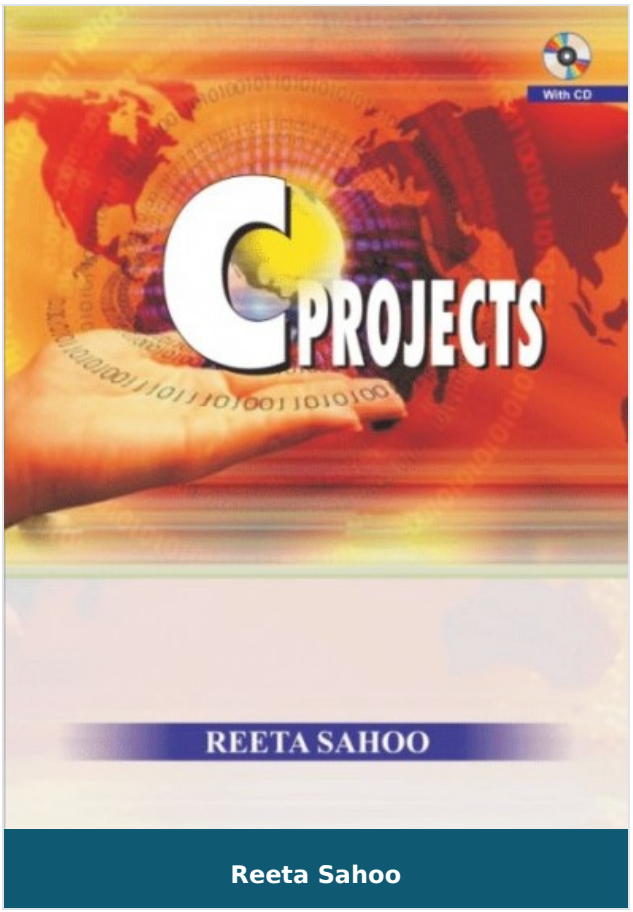

Reeta Sahoo

C Projects

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Product Description

This book has total 13 chapters on different projects and two appendices. In all the chapters the project development idea has been discussed with individual project concerned. Also almost in very chapter there are some functions of graphics commands and operational knowledge is emphasized to make good demonstration to the projects. whereas the graphics section are implemented in different functions only.

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- Restaurant Billing System
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- Banking System
- Pay Manager
- Library Management System
- Music Shop Management
- Year Calendar
- Drawing Logo
- Bricks Game
- Charts and Graphs
- Graphics Demo
- Utility Services

Author

Reeta Sahoo

Reeta Sahoo is an author of various books including, C++, VB, Java. Since last 10 years, she has lots of experience in different computer project works. She has written number of schoolbooks including C++, Visual Basic, Java, etc. This book helps lots to the beginner's who want to develpo programming skill in C++ language.

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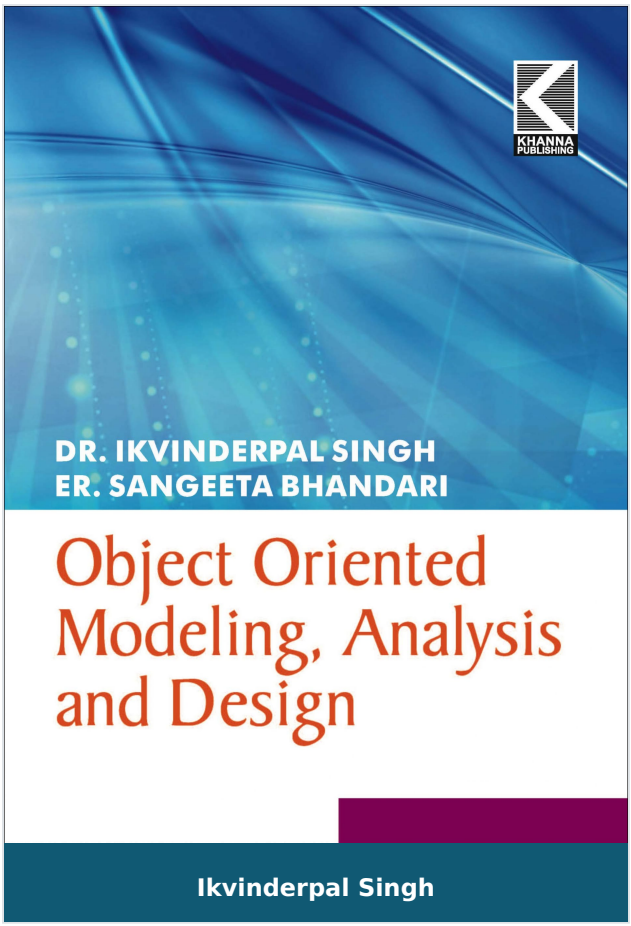

Object Oriented Modeling, Analysis and Design

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Product Description

This book presents are object oriented approach to software development based on modeling objects from the real world and then using the model to build a language independent design organized ground those objects. This book describes a set of object oriented concepts and a language independent graphical notation can be used to analyze problem requirements, design a solution to the problem, and then implement the solution in a programming language or database. This book can be used as a textbook for a graduate or postgraduate course on object oriented technology. It can be used as a supplementary text for courses on databases or programming languages.

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- Introduction
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- Object Oriented Modeling: Use Cases
- Object Oriented Analysis
- Object Model
- Advanced Object Model
- Dynamic Model
- Functional Model
- System Design
- Object Design

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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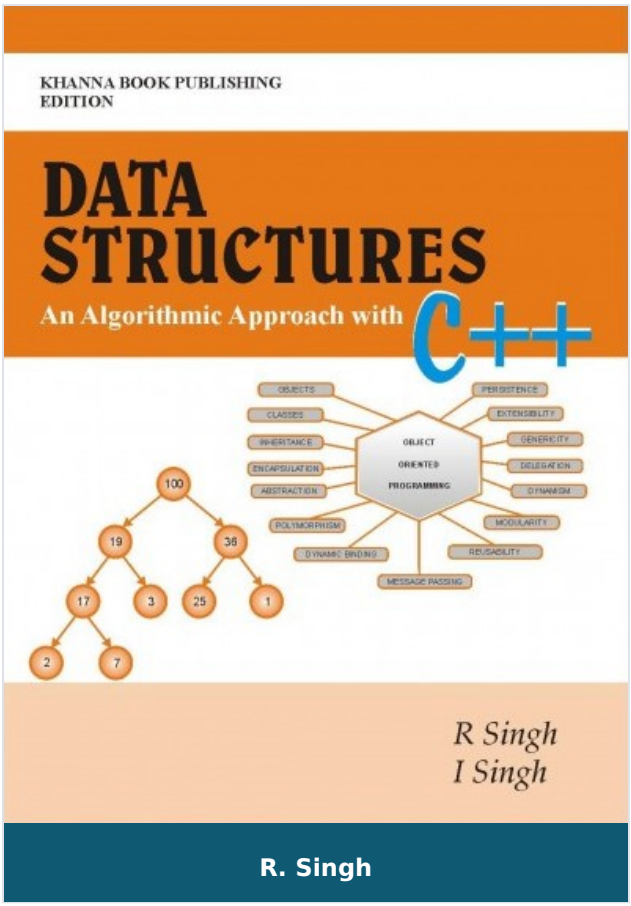

Data Structures - An Algorithmic Approach with C++

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Product Description

Written with the beginner in mind, this book provides an exceptionally clear and precise detail of data structures. Its approach is explanatory and language is lucid and communicable. Each and every data structure described with the help of its pictorial representation, algorithms, and implementation in C++ programming to have clear ideas. It contains lucid presentation of each and every operation that can perform on data structures.

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- Introduction to C++ Language
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- Algorithm Design and Complexity
- Arrays, Pointers and Records
- Linked Lists
- Stacks
- Queues
- Trees
- Search Trees
- Heaps
- Graphs
- Sorting and Searching Techniques
- Hashing
- File and Storage Management

Author

R. Singh

R. Singh "R Singh, MCA is equipped with an extraordinary calibre and appreciable academic potency. He has teaching experience of nearly twenty years. He has authored ten books on various complex topics of computer science. He has already submitted his Ph.D. thesis in the field of system simulation. His other areas of interest include Software Engineering, Data Structures and Information Systems. "

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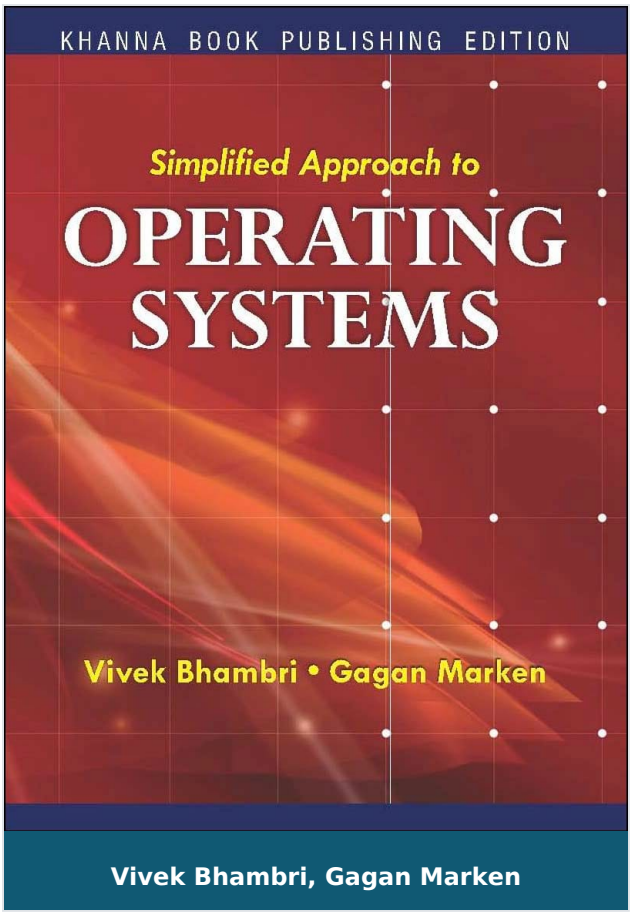

Simplified Approach to Operating Systems

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Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 350.00
Categories :	Computer Science Engineering, Book Store
Condition Type :	New
Country Origin :	India

Product Description

The book 'Simplified Approach to Operating Systems' is designed as a basic text book for computer science students at Post Graduation and under Graduation levels. It explains the technical concepts of operating systems in simple and easily understandable language. It does not bind the reader to one particular operating system, rather explains the concepts in general. It covers the complete syllabus of MCA,BCA, B. Tech and M.Sc. (IT) courses of all Indian Universities.

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- Introduction To Operating System
- Type Of Operating System
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- Case Study On disk Operating System (DOS)
- Case Study On Windows Operating System
- Case Study On Unix
- Case Study On Linux Operating System
- Multiple Choice Questions
- Model Question Papers

Author

Vivek Bhambri

Vivek Bhambri is working as Head, Department of Computer Sciences at Desh Bhagat Institute of Management and Computer Sciences, Mandi Gobindgarh (Punjab). He has a

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total teaching experience of 10 years. He is pursuing his research in the field of data mining. His areas of interest include Data Mining and Computer Architecture. He has published more than 20 research papers in International and National Journals.

Gagan Marken

Gagan Marken is working as Assistant Professor, in Computer Sciences Department at Desh Bhagat Institute of Management and Computer Sciences, Mandi Gobindgarh, (Punjab). He has a total experience of 12 years in the Industry and Teaching. He has published more than 20 papers in International and National Journals.

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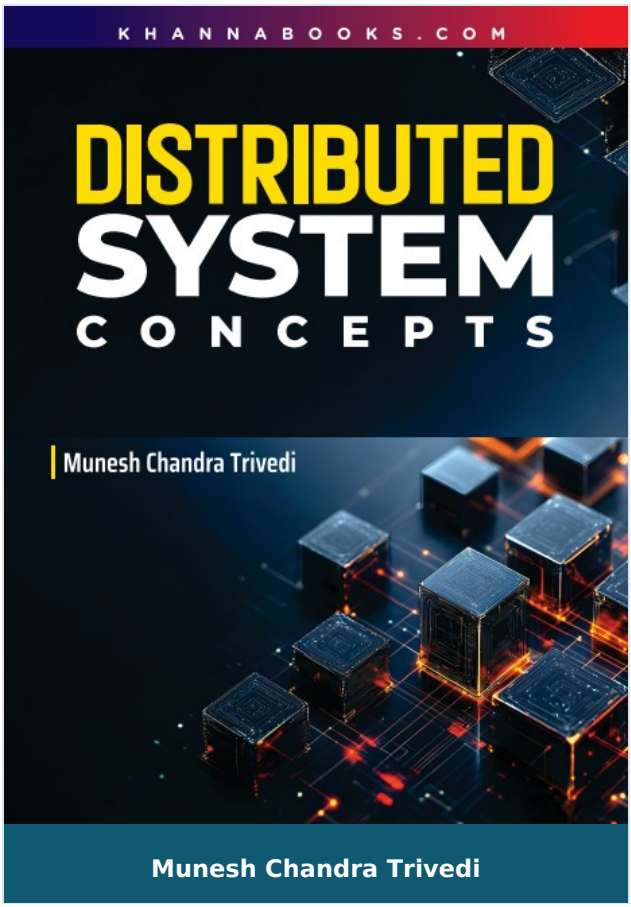

Distributed System Concepts

Author :	Munesh Chandra Trivedi
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Product Description

There are many books available in the market on the proposed topic but none of them can be termed as comprehensive, Besides, students face problem in understanding the language of the books, seeing these problems, it struck our mind that we should come up with a book in Distributed System Concepts, which should be simple enough to comprehend and comprehensive enough to encompass all the topics of different institutions and universities.

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- Process Concept
- Limitation of Distributed System
- Distributed Deadlock Detection
- Distributed File System
- Distributed Object and Remote Invocation
- Security
- Transaction and Concurrency Control
- Distributed Transactions
- Replication
- Communication Protocol
- Corba and Rmi
- Appendix

Author

Munesh Chandra Trivedi

Dr. Munesh Chandra Trivedi has more than 20 years of experience in the field of computer science & Engineering and has worked in Prestigious Institutions. He has more than 10 years' experience in various administrative responsibilities e.g., Dean (academics), Head of Department, TEQIP-111 Coordinator, PG coordinator, EDC cell Coordinator. Currently working Tripura, India, and Associate Professor and HoD (IT), Rajkiya Engineering College, Azamgarh, up (state Govt Institution of UP) with the additional responsibility of Dean Academics of the institute & Associate Dean UG Programs, Dr. APJ Abdul Kalam Technical University, Lucknow (State Technical University). He was also the Director (In-charge) at Rajkiya Engineering College,

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Azamgarh. He had successfully filed 81 patents (65 National and 16 International Patents (Germany, South Africa, and Australia)), out of which 40 patents were granted. He has published 12 textbooks and 168 research papers in different International Journals and proceedings of repute. He has also edited 38 books for springer Nature. He successfully supervised 14 PhD students and received numerous awards, including the Young scientist Visiting Fellowship, Albert Einstein Research scientist Award, Best senior Faculty Award, Outstanding Scientist, Dronacharya Award, Author of the Year, and vigyan Ratan award from different national, as well as international forums. He has organized more than 32 international conferences technically sponsored by IEEE, ACM, AND Springer. Dr.

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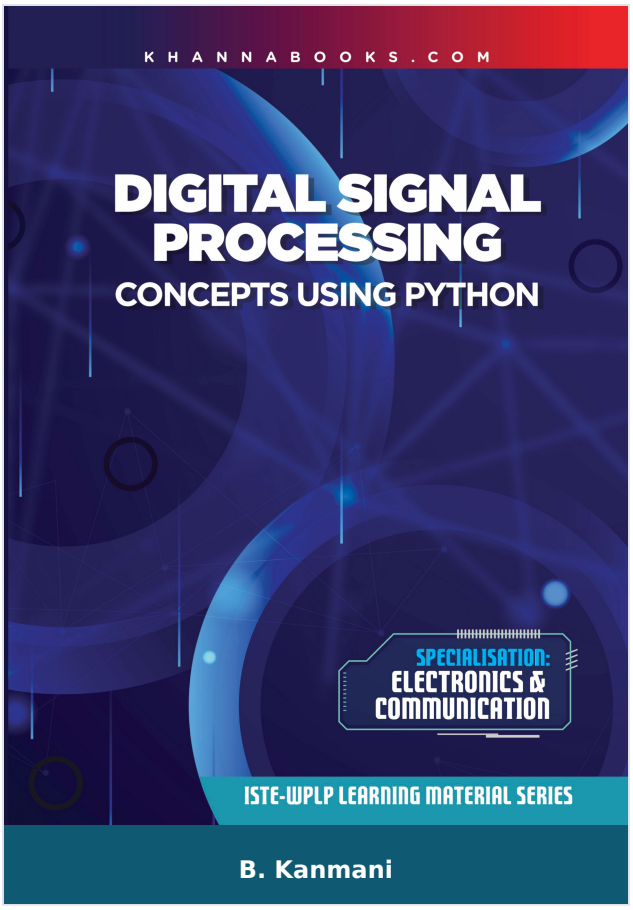

Digital Signal Processing Concepts Using Python

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Product Description

In this book, we have addressed various concepts in the typical Under Graduate course on, 'Digital Signal Processing'. The focus is to have a quick overview of the intended concept. This book is not a replacement to the prescribed text book in the curriculum. However, through the examples illustrated, it helps comprehend the concept. In addition, every Chapter of the book is accompanied by the link to the Python code is developed on the Goggle Colaboratory and hence is an Open source programming environment. No prior knowledge of Python is essential; however, and experience in any programming language will prove useful. The programming approach is to be able to develop the code for the concept from the mathematical equation and avoid the use of in-built functions. We would like to add that, we are using Python, purely to help comprehend the signal processing concept and not develop and efficient Python code. Experienced programmers may build alternate and efficient code.

The motivation for coming out with this compilation, is because, students are usually introduced to the required pre-requisitions in earlier courses. For example, the 'Engineering Mathematics', course is likely to have introduced Calculus (integration, differential equation, difference equation), Laplace Transform, Fourier series, Fourier Transform, Z-Transform. The courses on 'Analog Electronic Circuits and 'Network Analysis', is likely to have introduced basic electronic circuits including resistors, capacitors, inductors and Operational amplifiers, that require the need to obtain the transfer function, the response to a given output. The student is usually introduced to another independent programming language (C/C++/ Python/Matlab /Sci-lab/ R programming/any other), where the emphasis is on the syntax of the language. In this Book, we provide a brief introduction to every pre-requisite; explain the concept, together with few examples for every concept. In addition, wherever applicable, different methods of arriving at the given solution are also included. The concept of Digital Signal Processing

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is complete, even without any reference to Python. The reference to Python is purely for students to explore further.

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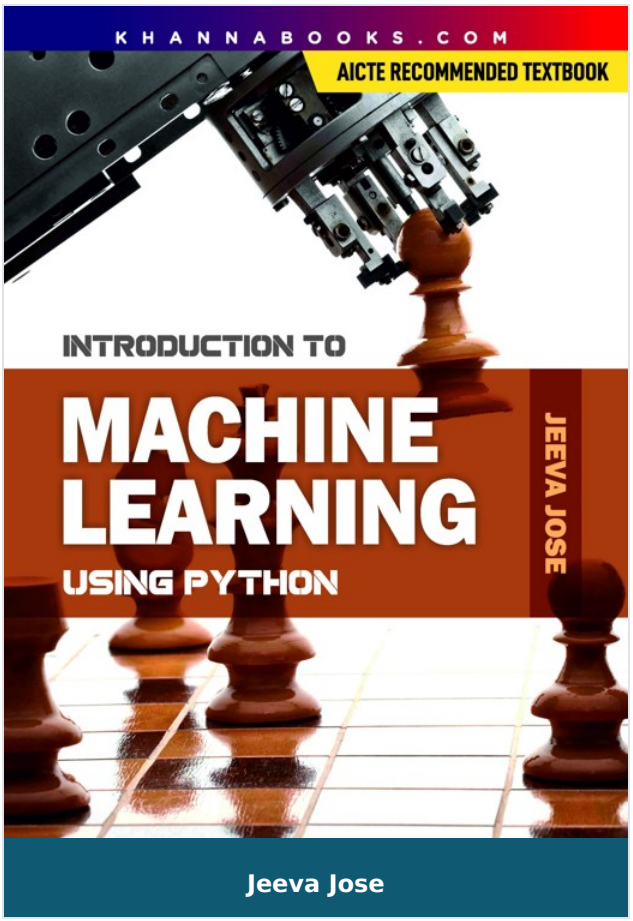

Introduction to Machine Learning

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Dr. Jeeva Jose completed Ph. D. in Computer Science from Mahatma Gandhi University, Kerala, India and is a faculty member at BPC College, Kerala. Her passion is teaching and areas of interests include world wide web, Data Mining and Cyber laws. She has been in higher education for the last 15 years and has completed three research projects funded by UGC and KSCSTE. She has published more than twenty research papers in various refereed journals and conference proceedings. She has edited three books and has given many invited talks in various conferences. She is a recipient of ACM-W Scholarship provided by Association for Computing Machinery, New York.

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S. Mangairkarasi, D. Jerusha, A. Muthulakshmi

Software Robot Design

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Product Description

In a world where robotics is advancing at an unprecedented pace, driven by advancements in artificial intelligence and machine learning, a strong grasp of the foundational tools is essential. SOFTWARE ROBOT DESIGN serves as a comprehensive and indispensable guide to the Robot Operating System (ROS), the versatile, open-source framework that has revolutionized the way intelligent and autonomous robots are designed, programmed, and deployed.

Authored by esteemed scholars—Dr. D. Jerusha, Dr. A. Muthulakshmi, and Dr. S. Mangairkarasi—this book equips readers with the practical and theoretical knowledge necessary to develop robust robotic systems, expertly bridging the gap between theoretical concepts and hands-on implementation. The book adopts a structured approach, meticulously covering the journey from setting up the essential Ubuntu/Linux environment and ROS basics to tackling complex subjects like sensor integration (LIDAR, cameras, IMUs), programming robotic actuators (motors, joints), and performing simulation in Gazebo.

Crucially, it delves into ROS Navigation, providing detailed instruction on robot localization using AMCL, map handling, and path planning using the move_base stack. Designed to be a valuable resource, this text is essential for students aspiring to enter the field, researchers exploring advanced applications, and industry professionals seeking to implement complex ROS-based solutions. The inclusion of practical examples, code snippets in C++ and Python, and dedicated chapters on interfacing ROS with embedded boards like Arduino and Raspberry Pi, ensures the knowledge is academically rigorous and directly aligned with industry demands.

Salient Features:

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• ROS Core Architecture: Provides in-depth coverage of fundamental ROS concepts, including Nodes, Topics, Services, and Messages, to establish a solid, modular foundation for distributed robot software development.

• Sensor-Actuator Programming: Offers practical guidance on interfacing and programming essential robotic sensors (LIDAR, IMU) and actuators (motors, joints), enabling precise control over a robot's perception and physical interaction.

• Real-World Navigation: Details the complete ROS Navigation Stack, including global and local path planning, AMCL localization, and costmap configuration for autonomous, obstacle-avoiding movement.

• Practical Coding Examples: Utilizes C++ and Python, the primary languages in robotics, to provide extensive code snippets and exercises, bridging theoretical understanding with hands-on development of ROS packages and nodes.

• Embedded System Interfacing: Includes dedicated chapters on integrating ROS with Arduino and Raspberry Pi, allowing developers to extend the framework to low-level hardware control and cost-effective robotic platforms.

• Simulation and Modeling: Teaches readers how to create robot models using the Unified Robot Description Format (URDF) and how to test and visualize their systems using Gazebo and RViz.

• Linux Environment Setup: Begins with a comprehensive review of Ubuntu Linux and essential Shell Commands, ensuring readers are proficient in the core operating environment required for all ROS development.

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