COMPUTER SCIENCE

Macdonald, Morgan Design and Analysis of Algorithms **Jersey City, USA: Alexis Press, LLC, c2024** [CO QA S58 .M33 2024]

The design and analysis of algorithms are essential components of computer science. They involve the systematic design of step-by-step procedures to solves problems, considering various factors such as runtime efficiency and correctness. Different design techniques, such as divide and conquer, dynamic programming, greedy algorithms and backtracking, offer solutions to different types of problems. Efficient algorithms design and analysis are crucial for the development of scalable and reliable software applications in today's technological landscape. Design and Analysis of Algorithms offers a thorough exploration of the foundational principles and advanced techniques essentials for computer scientists and enthusiasts alike. This comprehensive guide bridges theory and practice, equipping readers with the knowledge and skills to create efficient, robust algorithms and analyze their performance. It's a comprehensive roadmap for mastering the art of algorithms problem-solving. Whether you are a student aspiring to excel in you coursework, a professional seeking to optimize your code, a curious mind eager to explore the intricacies o algorithms design, this book is your gateway to unlocking the full potential of algorithms in computer science.

Signh, Manmohan, C Programming **Burlington, Canada: Arcler Press, c2024** [CO QA 76.73.C15 S56 2024]

The objective of the book "C Programming" is to provide a comprehensive and practical guide for beginners and experienced programmers alike in mastering the fundamental concepts and techniques of the C programming language. Through a systematic approach, this book aims to equip readers with a solid foundation in C programming, enabling them to write efficient, reliable, and maintainable code. It covers everything from basic syntax and data types to advanced topics such as memory management, file handling, and data structures. The book focuses on practical implementation, offering numerous examples and exercises to reinforce understanding and encourage hands-on learning. It emphasizes the importance of problem-solving and logical thinking, teaching readers how to break down complex problems into smaller, manageable tasks.

Description of contents are taken from Amazon.com, Book Blurb, Choice Review, Booklist, Book News, Inc., The New York Times and School Library Journal

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Patidar, Vinod, Python Programming Burlington, Canada: Arcler Press, c2024 [CO QA 76.73.P98 2024]

Welcome to the world of Python Programming! In this preface, we embark on a journey into the fascinating realm of one of the most versatile and widely-used programming language. Whether you are a seasoned developed looking to expand your skillset or a curious beginner eager to explore the art of coding, Python offers an exciting and accessible path to achieve your goals.

Python, developed in the late 1980s and the first released in 1991, was designed with the designed with the philosophy of simplicity and readability. Guido van Rossum, the creator of Python, aimed to create a language that emphasized code clarity, making it easy for programmers to express their ideas without getting bogged down in complex syntax. Over the years, Python has grown into a powerful language embraced by a vibrant community of developers worldwide. The versatility of Python is truly extraordinary. Whether you want to build web applications, conduct data analysis, create machine learning models, automate repetitive tasks, or even the world of artificial intelligence, Python has the tools and libraries to support you. Its extensive standard library and countless third-party packages make it an indispensable tool for solving a wide range of problems. This book (or course) will take you on a step-by-step journey through the fundamental concepts of Python Programming. We will start with the basics, gradually building your understanding of variables, data types, conditional statements, loops, functions, and more. As we progress, you will gain confidence in tackling real-world challenges and writing elegant, efficient, and maintainable code. Remember, learning to program is not just about mastering the syntax; it's about adopting a problem-solving mindset. Embrace the challenges and take the time to experiment, explore, and play with the code. Learning from mistakes is a crucial aspects of becoming a proficient programmer. Throughout this learning experience, remember that patience is key. Don't hesitate to ask questions, seek help, and engage with the Python community. There are countless resources available, including online forums, documentation, and programming communities, where you can find support and camaraderie in your journey. By the end of this book (or course), you will have the foundational knowledge and confidence to create your projects, collaborate with others, and continue your Python adventure. Whether you're interested in web development, scientific computing. Data science, or any other field, Python will serve as a faithful companion on your quest for knowledge and innovation.
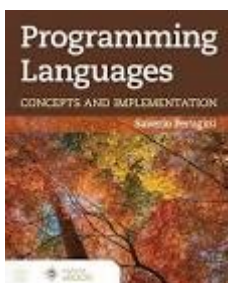
Perugini, Saverio, Programming Languages: Concepts and Implementation Burlington, MA: Jones & Bartlett Learning, [c2023] [CO QA 76.6 .P47 2023]

Programming Languages: Concepts and Implementation is a textbook on the fundamental principles of programming languages through a combination of concept-based and interpreter-based approaches. The book has an implementation-oriented focus and features conceptual and programming exercises that give students practical experience applying language theory and concepts. The book also showcases the construction of a progressive series of language interpreters in Python that cover the implementation of a host of core language concepts such as scope, first-class functions, and parameter passing. Other programming styles, including logic/declarative programming, and compelling language features, such as first-class continuations, are also discussed. Concepts are presented in Python, Scheme, JavaScript, Ruby, ML, Haskell, Prolog, and various other programming languages. This book is intended as a general-purpose textbook for a course on programming languages.Each new print textbook includes Navigate eBook Access, a digital-only e-book with 365-day access.

Description of contents are taken from Amazon.com, Book Blurb, Choice Review, Booklist, Book News, Inc., The New York Times and School Library Journal

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MacKenzie, I. Scott, Human-Computer Interaction: An Empirical Research Perspective 2nd Edition **United States: Morgan Kaufmann, [c2024]** [CO QA 76.9.H85 M334 2024]

Human-Computer Interaction: An Empirical Research Perspective is the definitive guide to empirical research in HCI. The book begins with foundational topics, including historical context, the human factor, interaction elements, and the fundamentals of science and research. From there, the book progresses to the methods for conducting an experiment to evaluate a new computer interface or interaction technique. There are detailed discussions and how-to analyses on models of interaction, focusing on descriptive models and predictive models. Writing and publishing a research paper is explored with helpful tips for success.

Throughout the book, readers will find hands-on exercises, checklists, and real-world examples. This is a must-have, comprehensive guide to empirical and experimental research in HCI – an essential addition to your HCI library.

- Provides a master, A-to-Z guide in a concise, hands-on reference

- Presents the practical and theoretical ins-and-outs of user studies

- Includes exercises, takeaway points, and case studies throughout

Updated to incorporate developments in HCI, including Human performance outliers, Interaction elements: pointing and selecting; text input; gesture input
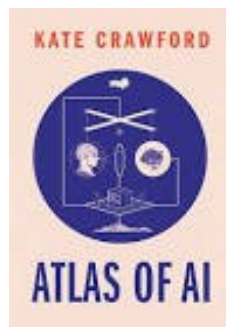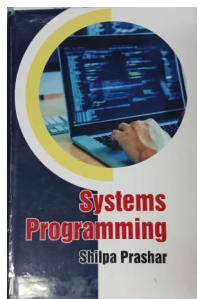
Crawford, Kate, Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence **New Haven: Yale University Press, c2021** [CO Q 335 .C63 2021]

What happens when artificial intelligence saturates political life and depletes the planet? How is AI shaping our understanding of ourselves and our societies? Drawing on more than a decade of research, award-winning scholar Kate Crawford reveals how AI is a technology of extraction: from the minerals drawn from the earth to the labor pulled from low-wage information workers to the data taken from every action and expression.

Crawford reveals how this planetary network is fueling a shift toward undemocratic governance and increased inequity. Rather than taking a narrow focus on code and algorithms, Crawford offers us a material and political perspective on what it takes to make AI and how it centralizes power. This is an urgent account of what is at stake as technology companies use artificial intelligence to reshape the world.
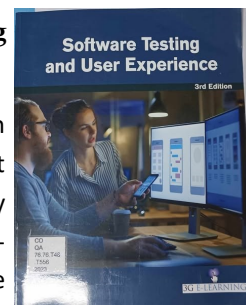
Description of contents are taken from Amazon.com, Book Blurb, Choice Review, Booklist, Book News, Inc., The New York Times and School Library Journal

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Prashar, Shilpa Systems Programming New Delhi: University Publication, c2023 [CO QA 76.6 .P73 2023]

Systems programming or system programming, is the activity of programming computer system software. The primary distinguishing characteristics of systems programming when compared to application programming is that application programming aims to produce software which provides services to the user directly (e.g. word processor), whereas systems programming aims to produce software platforms which provide services to other software, are performance constrained, or both (e.g. operating systems, computational science applications games engines, industrial automation, and software as a service applications). Systems programming is an essential part of any system. Similarly a course on systems is an essential part of any computer science education. This field is undergoing change at a breathtakingly rapid rate as computer are now prevalent in virtually every application from games for children through the most sophisticated planning tools for governments and multinational firms. An operating system acts as an intermediary between the user of a computer and computer hardware. The purpose of an system programming is to provide an environment in which a user can execute programs conveniently and efficiently. An operating system is a software that manages computer hardware. The hardware must provide appropriate mechanism to ensure the correct operation of the system. This book provides a clear description of the concepts that underlie systems programming and it useful for the systems studying at various universities colleges and institution for BCA, M.C.A., B.I.T and other allied courses in computer science.

Software Testing and User Experience 3rd Edition New York, NY: 3G E-Learning LLC, [c2023] [CO QA 76.76.T48 .T556 2023]

Software testing can be describe as a process to check the usability of a software application with the aim of finding out whether the created software meets the defined requirements or not and discovering the errors to confirm that the product is error free in order to produce a quality product. Software testing is vital because we all make mistakes. Some of these mistakes are unimportant, but some of them are costly or risky. In order to avoid mistakes, we need to double check everything and anything we create. The main reason for implementing software testing is a beg-free application. In fact, it is important to check the compatibility of the software tester. Customers benefit from the fact that the software tester tests himself and surfs through any website on cell phones or tablets. Ultimately, the roles and responsibilities of the developers increase to keep the customers satisfied by creating an important web application. A small mistake can create a big problem that hackers can steal private information and cannot be tolerated. Testing is context and risk based and requires a methodical and disciplined approach to finding the bugs. Good software testing is expected to remain credible and to take an exploratory, debugging, relentless, creative, diplomatic, and persuasive approach.

Description of contents are taken from Amazon.com, Book Blurb, Choice Review, Booklist, Book News, Inc., The New York Times and School Library Journal

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Narayan, Gopal, Big Data Analytics: Using Artificial Intelligence Technologies Transforming Organizations London, United Kingdom: Vintage Press Ltd, c2024 [CO QA 76.9.B45 .N37 2024]

Big Data consists of petabytes (more than 1 million gigabytes) and exabytes (more than 1 billion gigabytes), as opposed to the gigabytes common for personal devices. As big data emerged, so did computing models with the ability to store and manage it. Centralized or distributed computing systems provide access to big data. Distributed computing mean big data is stored and processed on different computers, which communicate over a network. A software framework like Hadoop makes it possible to store the data and run applications to process it. This latest book is about harnessing the power of data for new insights. The book covers the breadth of activities and method and tools that Data Scientists use. The content focuses on concepts, principles, and practical applications that are applicable to any industry and technology environment, and the learning is supported and explained with examples that you can replicate using open-source software. The book is primarily intended for statisticians, computer experts, engineers and application developers interested in using big data analytics with statistics. Readers should have a solid background in Statistics and computer science.

Pomperada, Jake Rodriguez, Fundamentals of Javascript Programming Revised Edition Intramuros, Manila: Mindshapers Co., Inc., [c2024] [CO QA 76.73.J39 P66 2024]

This book deals with the fundamentals of Javascript programming one of the most popular web scripting languages used in web programming. I intended this book for readers that are new to Javascript programming. It contains the step by steps instructions in writing your first JavaScript program, the tools needed for writing your programs, and tips and advice in testing, running, and finding errors in your program.
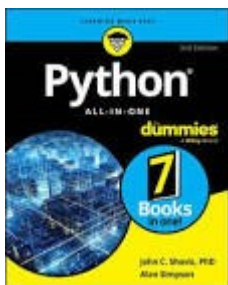
Shovic, John C., Python for Dummies 3rd Edition Hoboken, NJ: John Wiley & Sons, Inc., [c2024] [CO QA 76.73 .S568 2024]

Everything you need to know to get into Python coding, with 7 books in one

Python All-in-One For Dummies is your one-stop source for answers to all your Python questions. From creating apps to building complex web sites to sorting big data, Python provides a way to get the work done. This book is great as a starting point for those new to coding, and it also makes a perfect reference for experienced coders looking for more than the basics. Apply your Python skills to data analysis, learn to write AI-assisted code using GitHub CoPilot, and discover many more exciting uses for this top programming language.

- Get started coding in Python—even if you're new to computer programming
- Reference all the essentials and the latest updates, so your code is air-tight
- Learn how Python can be a solution for large-scale projects and big datasets
- Accelerate your career path with this comprehensive guide to learning Python

Experienced and would-be coders alike will love this easy-to-follow guide to learning and applying Python.

Narayan, Gopal, Data Analytics Visualization all-in-one for Dummies Hoboken, NJ: John Wiley & Sons, Inc., c2024 [CO QA 76.3.I52 D37 2024]
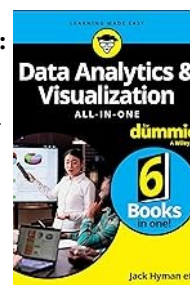
Data Analytics & Visualization All-in-One For Dummies collects the essential information on mining, organizing, and communicating data, all in one place. Clocking in at around 850 pages, this tome of a reference delivers eight books in one, so you can build a solid foundation of knowledge in data wrangling. Data analytics professionals are highly sought after these days, and this book will put you on the path to becoming one. You'll learn all about sources of data like data lakes, and you'll discover how to extract data using tools like Microsoft Power BI, organize the data in Microsoft Excel, and visually present the data in a way that makes sense using a Tableau. You'll even get an intro to the Python, R, and SQL coding needed to take your data skills to a new level. With this Dummies guide, you'll be well on your way to becoming a priceless data jockey.

- Mine data from data sources
- Organize and analyze data
- Use data to tell a story with Tableau

Expand your know-how with Python and R
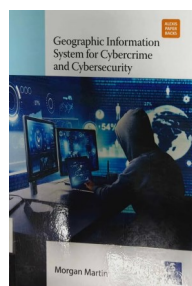
Martin, Morgan, Geographic Information System for Cybercrime and Cybersecurity Jersey City, USA: Alexis Press, c2024 [CO HV 6773 .M37 2024]

Understanding the basics of GIS is crucial for its effective application in cybersecurity. GIS involves the capture, storage, analysis, and visualization of spatial data, allowing for a comprehensive understanding of the geographic dimension of cyber threats. By integrating GIS into cybersecurity frameworks, organizations can enhance their ability to respond to and prevent cyber incidents> Geographic Information System (GIS) in the context of cybercrime is a powerful analytical tool that leverages spatial data to enhance understanding and response to digital threats. By mapping and visualizing the geographic distribution of cyber incidents, GIS aids law enforcement agencies and cybersecurity professional in identifying patterns and trends. This spatial perspective enables a more comprehensive assessment of cybercrime hotspots, facilitating targeted interventions and resource allocation to mitigate risks effectively. GIS plays a vital role in cyber threat analysis, helping investigators trace the origin and trajectory of cyber attacks, map digital footprints, and visualize the spatial aspects of incidents.

Geographic Information System (GIS) plays a crucial role in the field of cybersecurity, offering a spatial perspective to enhance the understanding and management of digital threats. By integrating GIS into cybersecurity frameworks, organizations gain the ability to visualize and analyze the geographical response, allowing cybersecurity professionals to identify patterns, map attack vectors and assess the risk landscape in different geographic areas. GIS facilitates the creation of comprehensive risk assessments and vulnerability maps, empowering organizations to develop and implement cybersecurity strategies that are tailored to specific locations and potential threat scenarios. This book, Geographic Information System into cybercrime and cybersecurity strategies provides a spatial perspective that enhances situational awareness, threat analysis, and collaborative efforts. GIS serves as a dynamic tool, contributing to a more effective and holistic approach in addressing the complex challenges posed by cyber threats in our interconnected world.
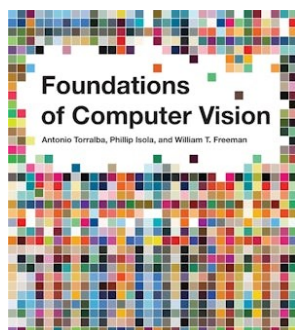
Torralba, Antonio, Foundations of Computer Vision Cambridge, Massachusetts: The MIT Press, c2024 [CO TA 1634 .T66 2024]

Foundations of Computer Vision comprehensively introduces the foundations of the field while incorporating the latest deep learning advances. It takes a holistic approach that goes beyond machine learning and addresses fundamental issues in the task of vision and the relationship of machine vision to human perception. Written by leaders in the field and honed by a decade of classroom experience, this authoritative and highly teachable book offers an essential next-generation view of computer vision.

Ahmad, Mir Zhehzad, Fundamentals of Programming Burlington, ON: Toronto Academic Press, c2024 [CO QA 76.6 .A36 2024]
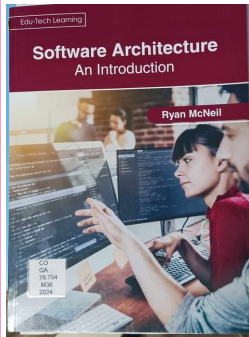
This text is a comprehensive guide to computer programming, covering the basic principles, concepts, and techniques of programming. The book provides a detailed overview of programming languages, algorithms, data structures, and software development methodologies. With clear explanations and practical examples, this book is an excellent starting point for anyone interested in learning programming fundamentals. It is an essential resource for students and professionals who want to develop their programming skills and enhance their understanding of computer science.
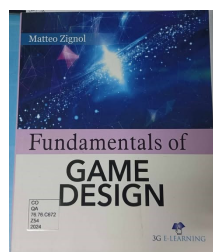
Zignol, Mattheo, Fundamentals of Game Design New York, NY: 3G E-Learning LLC, c2024 [CO QA 76.76.C672 Z54 2024]

Game design is a appealing field that combines creativity, technical skills, and a deep understanding of player psychology. It is the art and science of creating interactive experiences that engage and captivate players. To truly appreciate the fundamentals of game design, it's important to examine the key elements that make games successful and the impact they have on the industry. Unique crucial aspects of game design is gameplay mechanics. These are the rules, systems, and interactions that govern how players engage with the game world. From simple mechanics like jumping and shooting to complex systems like skills trees and resource management, gameplay mechanics define the core experience of a game. For instance, the iconic platformer Super Mario Bros introduced the concept of jumping on enemies' heads, a mechanic that has become synonymous with the genre. Also, game designers must consider the importance of storytelling. While gameplay mechanics provide the interactive framework, a compelling narrative adds depth and immersion to the player's experience. Game like The Last of US and the Mass Effect series are celebrated for their gripping narratives, which create emotional connections with players and keep them invested in the game world. Likewise, game design is greatly influenced by technological advancements. As technology improves, game developers gain success to more powerful hardware and software tools, enabling them to create increasingly realistic and visually stunning games.

Description of contents are taken from Amazon.com, Book Blurb, Choice Review, Booklist, Book News, Inc., The New York Times and School Library Journal

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McNeil, Ryan, Software Architecture: An Introduction New York, NY: Clanrye International, c2024 [CO QA 76.754 .M36 2024]

Software architecture involves the establishment of the foundational structures of a software systems. It serves as a blueprint for both the system and the development project. It outlines the tasks involved in the design process. Throughout the initial stages of software development, four primary activities are repeatedly conducted, namely, architectural synthesis, architectural analysis, architectural evolution, and architectural evaluation. Common components of software architectures include software architecture erosion, architecture description languages, architecture frameworks, software architecture description, and architecture viewpoints. This book attempts to understand the critical aspects that fall under the discipline of software architecture and how such aspects have practical applications. It is compiled in such a manner, that it will provide in-depth knowledge about the theory and practice of software architecture. This textbook will serve as a reference to a broad spectrum of readers.

Description of contents are taken from Amazon.com, Book Blurb, Choice Review, Booklist, Book News, Inc., The New York Times and School Library Journal

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