

## Data Structures And Algorithms

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The oil industry put fiber-optic sensing cables downhole to better understand why hydraulic fracturing doesn't free trapped oil at expected rates in shale reservoirs, but the massive streams of ...

*New algorithm efficiently diagnoses shale fracture results from fiber-optic data*  
Data analyst and data scientist roles are two of the hottest jobs on the market right now. But what exactly is the difference?

*What the hell is the difference between a data analyst and a data scientist?*  
And while the intricate inner workings of AI are notably complex, there are two basic functions that are extremely popular in most technological devices these days: Deep Learning and Machine Learning.

*The Difference Between Deep Learning and Machine Learning*  
As life becomes increasingly digital, it's vital that businesses adapt to new trends in customer behavior and expectations. This changing behavior brings great opportunity, as companies have many new ...

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Turkish education provider Hisar School and Microsoft Turkey are providing students with education in artificial intelligence (AI). As part of this, students use Azure Stack Edge Pro to create an ...

*Hisar School and Microsoft Turkey deliver artificial intelligence education*  
A move by New York's city council to insist on AI audits for recruitment software could spark greater interest in using ethical hackers to find evidence of discrimination in algorithms.

*Digital Bounty Hunters Want To Help Businesses Track Down Hidden AI Biases That Can Prevent People Getting Jobs And Loans*  
Today, the White House Office of Science and Technology Policy (OSTP) and the Center for American Progress co-hosted an online event to explore current and emergent uses of technology in the health ...

*RELEASE: Artificial Intelligence Must Help Advance Health Equity and Reduce Systemic Inequalities*  
Overview of Subject Matter Eligibility Challenges Computer-based inventions \u2013 especially in the machine learning (ML), bioinformatics, and artificial intelligence (AI) fields \u2013 are susc ...

*Examining Art Units to Avoid Subject Matter Eligibility Challenges for Bioinformatics and AI-related Patents*  
This jupyter file is combination of decision tree and Logistic regression algorithm of machine learning. Preparing our dataset These recommendations are so on point!

*This jupyter file is combination of decision tree and Logistic regression algorithm of machine learning*  
Advertisement New medications are developed on a regular basis, and many of them are also quite harmful. Law enforcement agencies are trying to find ways to regulate synthetic opioids, bath salts, and ...

*This New AI Algorithm Can Predict 'Designer Drugs' With More Than 90% Accuracy*  
Researchers from ITMO's Laboratory of Genomic Diversity and the have developed gPrior (gene prioritizer), an algorithm that uses data from a genome-wide association study (GWAS) to identify the genes ...

*ITMO: ITMO Researchers & Collaborators Develop New Algorithm for Linking Genes and Specific Diseases*  
The use of AI and machine learning in various employment processes is advancing rapidly. New products and services are entering the market at an explosive pace. These new technologies promise dramatic ...

*AI Can Be A Force For Good In Recruiting And Hiring New Employees*  
New rules from China could affect ByteDance's rules and algorithm, but the TikTok app could likely be spared from changes.

*China's tech crackdown is now taking aim at algorithms. Here's how TikTok and its parent company ByteDance could be affected.*  
The first is that leaving a lending decision to an algorithm mitigates the bias that can come with human judgement. The second is that these algorithms have the power to spot good credit risks because ...

Data -- Data Structures.

Data Structures and Algorithms in Java, Second Edition is designed to be easy to read and understand although the topic itself is complicated. Algorithms are the procedures that software programs use to manipulate data structures. Besides clear and simple example programs, the author includes a workshop as a small demonstration program executable on a Web browser. The programs demonstrate in graphical form what data structures look like and how they operate. In the second edition, the program is rewritten to improve operation and clarify the algorithms, the example programs are revised to work with the latest version of the Java JDK, and questions and exercises will be added at the end of each chapter making the book even more useful. Educational Supplement Suggested solutions to the programming projects found at the end of each chapter are made available to instructors at recognized educational institutions. This educational supplement can be found at www.prenhall.com, in the Instructor Resource Center.

There has been an explosive growth in the field of combinatorial algorithms. These algorithms depend not only on results in combinatorics and especially in graph theory, but also on the development of new data structures and new techniques for analyzing algorithms. Four classical problems in network optimization are covered in detail, including a development of the data structures they use and an analysis of their running time. Data Structures and Network Algorithms attempts to provide the reader with both a practical understanding of the algorithms, described to facilitate their easy implementation, and an appreciation of the depth and beauty of the field of graph algorithms.

If you're a student studying computer science or a software developer preparing for technical interviews, this practical book will help you learn and review some of the most important ideas in software engineering\u2014data structures and algorithms\u2014in a way that's clearer, more concise, and more engaging than other materials. By emphasizing practical knowledge and skills over theory, author Allen Downey shows you how to use data structures to implement efficient algorithms, and then analyze and measure their performance. You'll explore the important classes in the Java collections framework (JCF), how they're implemented, and how they're expected to perform. Each chapter presents hands-on exercises supported by test code online. Use data structures such as lists and maps, and understand how they work Build an application that reads Wikipedia pages, parses the contents, and navigates the resulting data tree Analyze code to predict how fast it will run and how much memory it will require Write classes that implement the Map interface, using a hash table and binary search tree Build a simple web search engine with a crawler, an indexer that stores web page contents, and a retriever that returns user query results Other books by Allen Downey include Think Java, Think Python, Think Stats, and Think Bayses.

Advanced Algorithms and Data Structures introduces a collection of algorithms for complex programming challenges in data analysis, machine learning, and graph computing. Summary As a software engineer, you'll encounter countless programming challenges that initially seem confusing, difficult, or even impossible. Don't despair! Many of these "new" problems already have well-established solutions. Advanced Algorithms and Data Structures teaches you powerful approaches to a wide range of tricky coding challenges that you can adapt and apply to your own applications. Providing a balanced blend of classic, advanced, and new algorithms, this practical guide upgrades your programming toolbox with new perspectives and hands-on techniques. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Can you improve the speed and efficiency of your applications without investing in new hardware? Well, yes, you can: Innovations in algorithms and data structures have led to huge advances in application performance. Pick up this book to discover a collection of advanced algorithms that will make you a more effective developer. About the book Advanced Algorithms and Data Structures introduces a collection of algorithms for complex programming challenges in data analysis, machine learning, and graph computing. You'll discover cutting-edge approaches to a variety of tricky scenarios. You'll even learn to design your own data structures for projects that require a custom solution. What's inside Build on basic data structures you already know Profile your algorithms to speed up application Store and query strings efficiently Distribute clustering algorithms with MapReduce Solve logistics problems using graphs and optimization algorithms About the reader For intermediate programmers. About the author Marcello La Rocca is a research scientist and a full-stack engineer. His focus is on optimization algorithms, genetic algorithms, machine learning, and quantum computing. Table of Contents 1 Introducing data structures PART 1 IMPROVING OVER BASIC DATA STRUCTURES 2 Improving priority queues: d-way heaps 3 Treaps: Using randomization to balance binary search trees 4 Bloom filters: Reducing the memory for tracking content 5 Disjoint sets: Sub-linear time processing 6 Trie, radix trie: Efficient string search 7 Use case: LRU cache PART 2 MULTIDIMENSIONAL QUERIES 8 Nearest neighbors search 9 K-d trees: Multidimensional data indexing 10 Similarity Search Trees: Approximate nearest neighbors search for image retrieval 11 Applications of nearest neighbor search 12 Clustering 13 Parallel clustering: MapReduce and canopy clustering PART 3 PLANAR GRAPHS AND MINIMUM CROSSING NUMBER 14 An introduction to graphs: Finding paths of minimum distance 15 Graph embeddings and planarity: Drawing graphs with minimal edge intersections 16 Gradient descent: Optimization problems (not just) on graphs 17 Simulated annealing: Optimization beyond local minima 18 Genetic algorithms: Biologically inspired, fast-converging optimization

Strengthen your understanding of data structures and their algorithms for the foundation you need to successfully design, implement and maintain virtually any software system. Theoretical, yet practical, DATA STRUCUTRES AND ALGORITHMS IN C++, 4E by experienced author Adam Drosdek highlights the fundamental connection between data structures and their algorithms, giving equal weight to the practical implementation of data structures and the theoretical analysis of algorithms and their efficiency. This edition provides critical new coverage of treaps, k-d trees and k-d B-trees, generational garbage collection, and other advanced topics such as sorting methods and a new hashing technique. Abundant C++ code examples and a variety of case studies provide valuable insights into data structures implementation. DATA STRUCTURES AND ALGORITHMS IN C++ provides the balance of theory and practice to prepare readers for a variety of applications in a modern, object-oriented paradigm. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Based on the authors' market leading data structures books in Java and C++, this textbook offers a comprehensive, definitive introduction to data structures in Python by authoritative authors. Data Structures and Algorithms in Python is the first authoritative object-oriented book available for the Python data structures course. Designed to provide a comprehensive introduction to data structures and algorithms, including their design, analysis, and implementation, the text will maintain the same general structure as Data Structures and Algorithms in Java and Data Structures and Algorithms in C++.

Explore data structures and algorithm concepts and their relation to everyday JavaScript development. A basic understanding of these ideas is essential to any JavaScript developer wishing to analyze and build great software solutions. You'll discover how to implement data structures such as hash tables, linked lists, stacks, queues, trees, and graphs. You'll also learn how a URL shortener, such as bit.ly, is developed and what is happening to the data as a PDF is uploaded to a webpage. This book covers the practical applications of data structures and algorithms to encryption, searching, sorting, and pattern matching. It is crucial for JavaScript developers to understand how data structures work and how to design algorithms. This book and the accompanying code provide that essential foundation for doing so. With JavaScript Data Structures and Algorithms you can start developing your knowledge and applying it to your JavaScript projects today. What You'll Learn Review core data structure fundamentals: arrays, linked-lists, trees, heaps, graphs, and hash-table Review core algorithm fundamentals: search, sort, recursion, breadth/depth first search, dynamic programming, bitwise operators Examine how the core data structure and algorithms knowledge fits into context of JavaScript explained using prototypical inheritance and native JavaScript objects/data types Take a high-level look at commonly used design patterns in JavaScript Who This Book Is For Existing web developers and software engineers seeking to develop or revisit their fundamental data structures knowledge; beginners and students studying JavaScript independently or via a course or coding bootcamp.

A comprehensive treatment focusing on the creation of efficient data structures and algorithms, this text explains how to select or design the data structure best suited to specific problems. It uses Java as the programming language and is suitable for second-year data structure courses and computer science courses in algorithmic analysis.

The design and analysis of efficient data structures has long been recognized as a key component of the Computer Science curriculum. Goodrich, Tomassia and Goldwasser's approach to this classic topic is based on the object-oriented paradigm as the framework of choice for the design of data structures. For each ADT presented in the text, the authors provide an associated Java interface. Concrete data structures realizing the ADTs are provided as Java classes implementing the interfaces. The Java code implementing fundamental data structures in this book is organized in a single Java package, net.datastructures. This package forms a coherent library of data structures and algorithms in Java specifically designed for educational purposes in a way that is complimentary with the Java Collections Framework.