Algoriths, Data Structures, and Competitive Programming

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2024-05-17

Table of contents

Preface **3**

1 Reading List **4**

1.1 ADS 4

1.1.1 Basic & Light Reading 4

1.1.2 Intermediate 4

1.1.3 Python 4

1.1.4 C 4

1.1.5 C++ 5

1.1.6 Java 5

1.1.7 Advanced 5

1.2 Discrete Math and Graph Theory 5

1.2.1 Graph Specific 6

Preface

This is a Quarto book.

To learn more about Quarto books visit https://quarto.org/docs/books.

1 Reading List

1.1 ADS

1.1.1 Basic & Light Reading

- Unlocking Algorithms. Cormen
- First Course in Algorithms Through Puzzles. Uehara

1.1.2 Intermediate

- Understanding Algorithms and Data Structures. Brunksill
- Algorithms + Data Structures = Programs. Wirth
- Problems on Algorithms. Ian Parberry
- Fundamentals of Algorithmics. Brassard, Bratley
- Foundations of Algorithms. Neapolitan
- Data Structures and Algorithms - a First Course. Adamson
- Algorithms and Data Structures - Design, Correctness, and Analysis. Kingston
- Data Structures and Their Algorithms. Lewis, Denenberg
- Design and Analysis of Algorithms. Smith

1.1.3 Python

- Data Structures and Algorithms in Python. Lafore
- Fundamentals of Python Data Structures. (2nd ed). Kenneth Lambert
- Competitive Programming in Python. Duerr

1.1.4 C

- Algorithms and Data Structures - an Approach in C.
- Programs and Data Structures in C. Ammeraal
- Foundations of Computer Science. Ullman

1.1.5 C++

- Data Structures and Algorithm Analysis in C++. Weiss
- Data Structures and Problem Solving using C++. Weiss
- Principles of Algorithmic Problem Solving. Sannemo
- Problem Solving in Data Structures & Algorithms Using C++. Hemant Jain

1.1.6 Java

- Fundamentals of OOP and Data Structures in Java. Wiener

1.1.7 Advanced

- How to Think About Algorithms. Jeff Edmonds
- Basic Toolbox. Melhorn
- Algorithms. Erickson

1.2 Discrete Math and Graph Theory

1. Mathematical Structures for Computer Science. Judith Gersting
    1. 3: Recurrence Relations & Analysis of Algorithms
    2. 5: Graphs & Trees
    3. 7: Graph Algorithms
2. Discrete Mathematics. Rosen 3: Algorithms 5: Induction & Recursion 8: Advanced Counting: recurrence relations 10: Graphs 11: Trees
3. Discrete & Combinatorial Mathematics
    1. 4: Mathematical Induction
    2. 5.7, 5.8: Analysis of Algorithms
    3. 10: Recurrence Relations
    4. 11, 12, 13: Graph Theory
4. Diskrete Mathematik fuer Einsteiger. Beutelspacher
5. Discrete Mathematics in Computer Science. Golovnev, Kulikov
6. Concrete Mathematics. Knuth

1.2.1 Graph Specific

1. Graph Theory - A Problem Oriented Approach. Daniel Marcus
2. Algorithmic Graph Theory. Alan Gibbons