Study Plan

Reading List

Algorithms

- Basic:
    1. Understanding Algorithms. *Brunskill*
    2. Algorithms Unlocked. *Cormen*
    3. First Course in Algorithms Through Puzzles. *Ryuhei Uehara*
    4. Algorithmic Thinking. *Daniel Zingaro*
    5. Principes of Algorithmic Problem Solving. *Johan Sannemo*
    6. Grokking Algorithms. *Aditya Bhargava*
- Intermediate:
    1. Design and Analysis of Algorithms. *Jeffrey Smith*
    2. Algorithms. *Jeff Erickson*
    3. How to Think About Algorithms. *Jeff Edmonds*
    4. Problems on Algorithmics. *Ian Perberry*
    5. Fundamentals of Algorithmics. *Brassard, Bratley.*
    6. Algorithmen & Datenstrukturen - Grundwerkzeuge. *Kurt Melhorn*
    7. Lecture Notes on Algorithms. *Ian Perberry*
    8. Algorithm Design. *Kleinberg, Tardos*
    9. Algorithms Illuminated. *Roughgarden*
    10. Compared to What. *G. J. E. Rawlins*
    11. Foundations of Algorithms. *Richard Neapolitan*
    12. Data Structurese & Their Algorithms. *Harry Lewis, Larry Denenberg*
    13. Algorithms + Data Structures = Programs. *Niklaus Wirth*
    14. Algorithms and Data Structures - Design, Correctness, Analysis. *Jeffrey H. Kingston*
    15. Computer Algorithms. *Baase*

- C++:
    1. Data Structures & Problem Solving Using C++. *M. A. Weiss*
    2. Data Structures & Algorithm Analysis in C++. *M. A. Weiss*
    3. Data & Algorithms in C++. *Drozdek*.
    4. Data Structures other Objects using C++. *Walter Savitch*
    5. Principles of Algorithmic Problem Solving. *Johan Sannemo*
    6. Guide to Competitive Programming. *Antti Laaksonen*
- C:
    1. Algorithms and Data Structures - An Approach in C. *Bowman*
    2. Foundations of Computer Science. *Aho, Ullman*
    3. Programs and Datastructures in C. *Ameraal*
- Python:
    1. Data Structures and Algorithms Using Python. *Rance D. Necaise*.
    2. Data Structures & Algorithms in Python. *Canning, Broder, Lafore*
    3. Competitive Programaming with Python. *Duerr, Vie*
    4. Problem Solving with Algorithms and Data Structures Using Python. *Franklin, Beedle*

Graph Theory and Discrete Mathematics

- General Discrete Mathematics:
    1. Mathematical Structures for Computer Science. *Judith Gersting*
    2. Discrete & Combinatorial Mathematics. *Grimaldi*
    3. Concrete Mathematics *Knuth*
    4. Diskerte Mathematik fuer Einsteiger. *Beutelspacher*
    5. Discrete Mathematics in Computer Science. *Golovnev, Kulikov*
- Graph Theory Specific
    1. Graph Theory - A Poblem Oriented Approach. *Daniel A. Marcus*
    2. Algorithmic Graph Theory. *Alan M. Gibbons*
    3. Sets, Puzzles & Postmen. *Higgins*

Specifically:

- Gersting:
    - 3: Recurrence relations & analysis of algorithms
    - 5: Graphs & Trees
    - 7: Graph algorithms

- Rosen:
  - 3: Algorithms
  - 5: Induction & Recursion
  - 8: Advancerd Counting: recurrence relations
  - 10: Graphs
  - 11: Trees
- Grimaldi:
  - 4: Mathematical induction
  - 5.7, 5.8: Analysis of Algorithms
  - 10: Recurrence relations
  - 11, 12, 13: Graph Theory