CSC 382 Analysis of Algorithms

Syllabus

Meeting Information

- **Days, Times, & Room:** Tu Th 4:40 – 6:20 PM @ 3N 216

- **Homepage:** http://www.cs.csi.cuny.edu/∼chen/382

- **Instructor:** Cong Chen (cong.chen@csi.cuny.edu)

- **Office Hours:** Th 2:00 PM – 4:00 PM @ 4N 206

Textbook

- Introduction to algorithms

Grading Policy

- **Attendance & Participation:** 1 point each

- **Assignments:** 5 or 10 points each

- **4 Exams:** 20 points each

- **Grades:**

  A: more than 89 points;
  B: 80 to 89 points;
  C: 70 to 79 points;
  D: 60 to 69 points;
  F: fewer than 60 points

Topics

- **Easy Problems (Warm-up):** Iteration & Recursion, Array, Binary Search

- **Data Structures (Reviews):** Vector (Dynamic Array), Linked List, Hash Tables, Binary Search Trees

  (Chapter 10, 11, 12)
  —— Exam I ——

- **Sorting and Order Statistics:** Complexity, Big-O Notation, Bubble/Insertion/Selection Sort, Divide and Conquer, Merge Sort, Quick Sort, Heap Sort (Priority queues), Counting Sort, Medians and Order (topK)

- **Probabilistic Analysis:**

  (Chapter 3, 4, 5, 6, 7, 8, 9)
  —— Exam II (Midterm) ——

- **Dynamic Programming, Greedy algorithms**

- **Graph Theory:** Representation and applications

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(Chapter 15, 16, 22.1)

—— Exam III ——

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- **Graph Search:** DFS, BFS, Dijkstra, Connectivity, Topological Sort

- **Minimum Spanning Trees**

- **Bellman-Ford and Floyd-Warshall Algorithms**

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(Chapter 22, 23, 24, 25)

—— Exam IV (Final) ——

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