

Career & DSA Guide

Section 1: Data Structures and Algorithms (DSA)

Why DSA Matters

DSA is the backbone of computer science. It helps you solve complex problems efficiently and is often the core focus in technical interviews at product-based companies.

Core Topics to Master

- Arrays & Strings: Sliding Window, Two Pointers, Prefix Sum
- Linked Lists: Reverse Linked List, Detect Cycle (Floyds Algo)
- Stacks & Queues: Balanced Parentheses, Next Greater Element
- Trees & BST: Traversals, LCA, Diameter of Tree
- Heaps: Top K Elements, Median of Stream
- Graphs: BFS, DFS, Dijkstra's Algorithm
- Dynamic Programming: 0/1 Knapsack, Longest Palindromic Substring
- Tries: Word Dictionary, Auto-suggestions

Must-Use Platforms: LeetCode, GfG, Codeforces, InterviewBit

Strategy: Solve 5 problems/day, use a spreadsheet to track progress.

Section 2: Placement Preparation Roadmap

Resume Building Tips:

- Keep it 1 page
- Strong summary, impact-based project points

Mock Interviews: Use Pramp, Interviewing.io, Scaler

System Design: Learn Load Balancers, Caching, Databases, URL shortener

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Section 3: Career Guidance

Ask yourself what excites you and choose accordingly:

- Web Dev, DSA, Data Science, DevOps, BA

Career Options Table:

Frontend | HTML, CSS, JS | React

Backend | Node, Python | Mongo, SQL

Full Stack | Full Web Dev | MERN, MEAN

Data Scientist | Stats, ML | Pandas, Sklearn

DevOps | CI/CD | Docker, AWS

AI/ML | DL, Models | HuggingFace, TF

BA | Stakeholder Mgmt | Excel, SQL, Tableau

Section 4: Project Ideas to Stand Out

- AI Resume Builder
- Face Recognition Attendance
- Personalized DSA Tracker
- Collaborative Shopping Cart

Make sure projects have README, GitHub link, demo if possible.

Section 5: HR & Behavioral Interview Tips

Questions:

- Tell me about yourself
- Why should we hire you?
- A time you failed?

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Use STAR Method:

S - Situation, T - Task, A - Action, R - Result

Final Tips

- Join tech communities, build in public
- Be consistent even for 1 hour/day

"Be better than yesterday."