The Ultimate Preparation Strategy For Coding Interviews

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Overview

Resume Guidelines

Important things to include in Resume

- Name, Email, Phone
- Experience
- Education [only the highlights]
- Projects [Include 1-liner explanation for your projects,Mention technologies used]
- Technical Skills
- Achievements

Resume Guidelines (cont.)

Formatting

- Font: Times New Roman
- Fontsize:10-12px

Ideal Resume length:1 page
Remove irrelevant information

- Objective/Career Objective
- Summary/Personal Summary
- Personal Information: Address, Qualities/Traits, Mother/Father Name, DOB etc.
- Declaration [Place/Date etc]
- Remove Personal Pronouns

Resume Guidelines (cont.)

Things to Strengthen Resume

- Open Source Contribution
- High CGPA/Grades
- Good projects
- Good company in your work profile
- Competitive Programmer
- ACM-ICPC Experience
- Regular blogs on technical topics
- Apps with large number of users

Resume Guidelines (cont.)

2 Commonly Used Resume Templates

- Careercup Resume
- Deedy Resume

Resume Guidelines (cont.)

Few Important Points

- Use Google's XYZ formula["Accomplished X as measured by Y, by doing Z"]

  What the resume says: "Increased server query response time."

  What the Googlers suggest: "Increased server query response time by 15 percent by restructuring our API."

- Explain why your wins are impressive

  What the resume says: "Won second place in Hackathon."

  What the Googlers method suggests: "Won second place out of 50 teams in hackathon by working with two colleagues to develop an app that synchronizes mobile calendars."

Resume Guidelines (cont.)

- Show how you stand out

  What the resume says: "Member of Leadership for Tomorrow Society"

  What the Googlers suggest: "Selected as one of 275 participants nationwide for this 12-month professional development program for high-achieving diverse talent based on leadership potential and academic success."

- Use Strong Action Verbs(Created,Managed,Spearheaded)
- Use Specific Numbers not Fillers(Change implemented various features to implemented 10+ features)
- Match skills and keywords from the job description

Resume Guidelines (cont.)

Resume Evaluation Platforms

- Topresume.com
- Resumeworded.com

80-20 Rule for Coding Interviews

20% effort gives 80% of the results

3 Important Topics for Coding Interviews

- Arrays and Strings
- Recursion and Dynamic Programming
- Trees and Graphs

The 3 Circles of Coding Interviews

- Data Structures
- Coding Interview Patterns
- Compound Algorithms

Coding Interview Patterns

- Sliding window(Acquire-Settle-Release Method)
- Two pointers
- Fast and slow Pointers
- Merge Intervals(Linesweep Technique)
- Cyclic Sort
- In-place Reversal of a LinkedList
- BFS ,DFS and topological Sort
- 2 Heaps
- Binary Search(save and move trick)
- Bitwise XOR
- Top K elements
- Sorting Algorithms

Coding Interview Patterns (cont.)

- K-way Merge
- Prefix Sum Method
- Backtracking Method
- Monotonic Queue Algorithm
- Dutch National Flag Pattern
- Auxillary Buffer Method
- Bipartite Graph
- Connected Components
- Bracket based Questions
- Next Greater Element Based Questions
- Bitmasking Based Questions
- Stock problem Pattern

Coding Interview Patterns (cont.)

- String Comparison,Alignment and Matching
- Using 256 Integer array for String Problems
- Layering method for 2d arrays
- Meet in the Middle Technique

Recursion Patterns

- Iteration
- Subproblems
- Selections
- Ordering
- Divide and Conquer

Dynamic Programming Patterns

- 0/1 Knapsack
- Unbounded Knapsack
- Fibonacci Numbers
- Palindromic Subsequence
- Longest Common Substring
- Minimum Cost Path
- Minimum Jumps
- Catalan Number Based Questions
- Cuts Based Questions
- Include Exclude Array Strategy Based Questions

The CTBPO method for approaching coding interview Questions

- Clarify the requirements
- Test Cases
- Bruteforce
- Pattern Recognition
- Optimize(BUD,DIY,Simply and Generalize,Make a base and step up,Datastructure marathon)

Strategy for low level Design Interviews

- Gather requirements
- Define core classes ad objects
- Relationships between the classes
- Try to fulfill all the requirements
- Apply OOPS principles
- Good to know SOLID Principles

Low level Design Interview Questions

- Design ATM
- Design Parking Lot
- Design Movie Ticket Booking System
- Design Elevator
- Design Hotel Management System
- Design Library Management System

Strategy for behavioral Interviews

- Use STAR framework(Situation-Task-Action-Result)
- or Use SPSIL framework(Situation-Problem-Solution-Impact-Lessons)
- Maximum Answer time =2mins
- Use I instead of We
- Prepare Answers before and write them down

Some Behavorial Questions

- Tell me about a project that you're most proud about
- Tell me about a time that you failed
- Tell me about a time when you had to resolve a conflict
- Tell me about a time when you led a team

Resource Suggestons

- Grokking Coding Interview
- Grokking Dynamic Programming
- Grokking Object Oriented Design
- Competitive programmers Handbook
- Cracking the coding Interviews
- Elements of Programming Interviews
- Tech Interview Handbook
- Leetcode Course book
- Programcreek book
- Dynamic Programming Course by Coding Blocks
- Algoexpert

Resource Suggestons (cont.)

Recommended Platform:Leetcode
Recommended no of problems: 300-500problems.
Language:C++,Java,Python Interviewers typically select their questions from the LeetCode question database
Write clean code
Write helper functions
Smartly selecting leetcode Questions

- Teamblind's 75 leetcode Questions
- 30 Days to your Dream Company by take U Forward
- 170+ leetcode Questions by Sean Prasad
- Pepcoding's 500 Problems List and Notes
- Afteracademy Interview Preparation Kit Questions
- Byte by Byte 50 Questions
- Leetcode preparation Plan by interviewhelp.io

Resource Suggestons (cont.)

Tricks to get better

- Upsolving(Read most voted and look geeksforgeeks.org)
- Spaced Repetition(First time-Struggle,Second time-comfortable Third time-second nature)
- Consistency is the key
- Dry run the code and submit code once
- Speak while practicing
- Practice problem by hand
- After each question,write down what you could have done to make the problem solving easier

Resource Suggestons (cont.)

Interview Evaluation

- Coding-Good code quality,cover edge/boundary cases,Dry run the code
- Data Structure and algorithms-Why that particular datastructure,propose multiple approaches,analyse time and space complexities
- How long did you take to reach the optimal solution
- Your thought process
- How you communicate

Resource Suggestons (cont.)

Remote Jobs

- Toptal
- Gigster
- Arc
- GoRemote
- remoteok.io
- weworkremotely.com
- nodesk.co
- Use Hunter
- Upwork
- Fiverr

Resource Suggestons (cont.)

Offcampus Jobs

- Shredskerala
- AMCAT,Cocubes,Elitmus test
- Linkedin Groups
- Facebook Groups
- Career pages
- Telegram Groups
- Naukri,cutshort.io,monsterindia,instahyre,indeed
- geeksgod and Freshersworld

Resource Suggestons (cont.)

Recommended Youtube Channels

- Errichto
- Pepcoding
- Take U forward
- Stable Sort
- Gate lectures by Ravindrababu Ravula(Algorithms)
- Abdul Bari
- Aditya Verma
- Tushar Roy
- Silicon Valley Codecamp
- interviewing.io
- Programming Pathshala

Resource Suggestons (cont.)

- Interview Kickstart
- Coding Blocks
- Coding Ninjas
- Scalar Academy
- appliedaicourse
- Apna College
- William Fiset
- Nick White
- Backtobackswe
- Kevin Naughton
- Rachit Jain
- TECH DOSE

Resource Suggestons (cont.)

- Gaurav Sen
- CodeBuddy Official
- Soumyajit Bhattacharyay
- Udit Agarwal
- TechDummies
- Tech Interview Guide
- CodeKarle
- CodeNCode

Resource Suggestons (cont.)

Recommended Reads

- engineerseekingfire.com
- igotanoffer.com
- https://4tee-learn.blogspot.com
- Important and useful links from allover leetcode
- workat.tech
- bytebybyte.com
- algodaily.com
- geeksforgeeks.org
- blog.interviewcamp.io
- interviewhelp.io/blog
- interviewcake.com

Resource Suggestons (cont.)

- Dynamic programming patterns leetcode
- SOAI_KOLLAM Telegram Channel
- A to Z Resources for Students

Resource Suggestons (cont.)

Mock Interview Platforms

- Interviewing.io
- Gainlo
- Pramp

Resource Suggestons (cont.)

Referrals

- refsy.io
- repher.me
- Triplebyte.com
- Networking(Linkedin,Goodwall)
- Alumni
- Cold mail(massapply.com)

Resource Suggestons (cont.)

Important Coding Competitions

- Microsoft Techsetgo-November or December
- Codenation's Codeagon -August
- Amazon's WOW-January
- Google Kickstart and CodeJam

Resource Suggestons (cont.)

Analysing Time constraints
How to approach a problem in competitive programming contest by Coding Ninjas

- N 10**8 O(N)
- N 10**4 O(N**2)
- N 10**7 O(Nlog N)
- N 10**18 O(log N)
- N 20 O(2**N)

Ways to get Unstuck during Coding Interviews

- Fully understand the problem
- Work through problem by hand
- Find bruteforce Solution
- Simplify the problem
- break down problem into subproblems.
- Make it clear where you are
- Pay Attention to your interviewer
- Ask for hint

Commonly Asked Questions

Operation System Questions

- Difference b/w thread and process
- Difference b/w semaphore and mutex
- Scheduling algorithms
- Paging and Segmentation
- Critical section
- Deadlock

Commonly Asked Questions (cont.)

Important DBMS Questions

- Relational Constraints like domain,key,entity integrity,referential integrity
- Difference b/w truncate and delete
- Types of joins
- Acid Properties
- Lost Update and Dirty Read
- Types of Normalisation
- Trivial and Non Trivial Dependencies
- Insert,Delete and Update Anomalies
- SQL Queries,SQL Functions,SQL vs NoSQL

Commonly Asked Questions (cont.)

Important CS Fundamental Questions

- Explain OOPS Concept with examples
- List,Arraylist,Hashmap and Hashset
- Abstract Class and Interface
- Function Overloading vs Overriding
- Constructor and Destructor
- Big Data,AI,Cloud Computing,Machine learning

Questions to ask interviewer-Genuine,Insightful and Passion

Thank You and Suggestions

- Interview is a game
- The harder you work the luckier you get
- Conquer your fears
- Dont be afraid to fail
- Rewind the game
- Every rejection redirects you to something better
- Read rejected.us
- Your competition is in the mirror
- Interview is like a box of chocolates
- To get something you never had,you have to do something you never did