How to Prepare Your Resume (and Yourself!) for Technical Interviews

Today

- Choosing Companies
- Resumes
- Before the Interview
- During the Interview
- After the Interview

Choosing Companies

Questions to Ask Yourself

- What are you looking for out of an internship / full-time role?
- Would you be excited to get up every day and work on this project?
- Would you be excited to get up every day and work with this team?
- Do your values align with the company’s values?
- Does the company size fit with what you’re looking for?

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	Small (0-50)	Medium (50-500)	Large (500+)
Your role	Many roles	Generalist	Specialist
Autonomy	Do what needs to be done	High level mandate	Clear direction
Product influence	Eng/pm hybrids	Involved in planning	Receive plans
Agency	Choose (or start) your team	Choose among some teams	Assigned a team
Access to information	Everything is discussed openly	Lots of information available	Information carefully controlled
Mentorship	Ad-hoc	Mentors, buddies, bootcamps	“XYZ University”
Financial return	Low salary + very high potential upside	Reasonable salary + high potential upside	Very high salary + low potential upside

Resumes

Not that important

30 seconds

10 Resume Rules

1. One page, no exceptions
2. Make it easy to skim
3. Make contact info obvious
4. Highlight specific accomplishments
5. Include interesting personal projects

10 Resume Rules

6. No charts or ratings
7. No objective
8. Use a professional email
9. Include relevant links: LinkedIn, GitHub, portfolio
10. Don’t sweat aesthetics

Emily Saavedra

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Profile

Highly accurate and experienced Data Scientist adept at collecting, analyzing, and interpreting large datasets, developing new forecasting models, and performing data management tasks.
Possessing an extensive analytical skills, strong attention to detail, and a significant ability to work in team environments, Emily is presently looking for a Data Scientist position with a forward-moving company.

Work experience

09/2017 – 02/2019
LONDON, UNITED KINGDOM
SpyBiotech, Inc.
Data Scientist

- Assisted in scientific research on DNA cloning and analyzed the results.
- Collected, studied, and interpreted large datasets; conducted reports; performed accurate, successful data management.
- Developed and implemented new forecasting models which increased company productivity and efficiency.
- Participated in monthly meetings with executives, provided information on the progress.

07/2016 – 09/2017
LONDON, UNITED KINGDOM
Data Scientist
CGL, Inc.

- Collected, analyzed, and interpreted raw data from various websites.
- Collaborated with the Operations and Technology Department on the development of new automated data management/analysis software which increased the overall productivity and cut unnecessary costs.
- Maintained and managed company's MS SQL server.
- Increased the accuracy of forecasting software from 80% to 95%.

Education

09/2012 – 05/2016
CHICHESTER, UNITED KINGDOM
Mathematics and Statistics
University of Chichester
First Class Honours
Clubs and Societies: Business Club, Golf Club, Riding Club

09/2010 – 05/2012 EL PARAISO, SPAIN
IB Diploma Programme
The International School Estepona
Graduated with Distinction (Grade 1 - A/excellent equivalent in all 6 subjects)

Skills

LANGUAGES

Spanish	**Native**
English	**Full**
French	**Limited**

COMPUTER/DATA ANALYTICS SKILLS

Microsoft Office	
MS SQL Server	
Sisense, Zoho Analytics	
GoodData, Qlik Sense	

INTERPERSONAL SKILLS

Accuracy	
Analytical Skills	
Detail Orientation	
Good Team Player	
Multitasking	

Volunteering

06/2014 – 08/2014 SUVA, FIJI
English Tutor
Go Overseas

Certificates

10/2016
Professional Certificate in Data Analysis
The Chartered Institute for IT

MARISSA MAYER

Business Woman & Proud Geek

mmayer@yahoo-inc.com
https://marissamayr.tumblr.com
Sunnyvale, CA

EXPERIENCE

President & CEO

Yahoo!

07/2012 - Ongoing Sunnyvale, CA

- Led the $4 billion acquisition of the company by Verizon
- Acquired Tumblr for $1.1 billion and moved the company's blog there
- Got to $1.6 billion in GAAP revenue in mobile, video, and social
- Tripled the company's mobile base to over 600 million active users

Vice President of Location & Local Services

Google

10/2010 - 07/2012 Palo Alto, CA

- Positioned Google Maps as the world leader in maps and navigation

Vice President of Search Products & UX

Google

2005 - 2010 Palo Alto, CA

Product Manager & Technical UI Lead

Google

2001 - 2005 Palo Alto, CA

- Optimized usability on Google's homepage to the smallest detail

Product Engineer

Google

1999 - 2001 Palo Alto, CA

- Joined the company as employee #20 and female employee #1

EDUCATION

M.S. in Computer Science

Stanford University

1997 - 1999

B.S. in Symbolic Systems

Stanford University

1993 - 1997

MOST PROUD OF

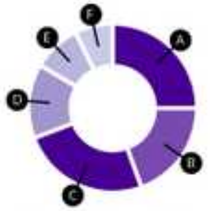
Courage I had
to take a sinking ship and make it float

Persistance & Loyalty
I showed through hard times at Yahoo following its acquisition

Google's growth
from 100k daily searches to 1 billion+

Inspiring women in tech
by being the youngest CEO on Fortune's list of the 50 most powerful women

MY TIME



- A Spending time with my children
- B Publicly resolving Yahoo! investor issues
- C Showing Yahoo! employees their work has meaning
- D Building a biz-dev strategy for Yahoo's future after the Verizon acquisition
- E Serving on the boards of New York and San Francisco ballet companies
- F Creating spreadsheets for my amazing cupcake recipes

Before the Interview

What to Expect

Timing

- Interview early
- Plan interviewing into your schedule
- Look for opportunities geared at your experience

Process

- Coding challenge
- Take home
- Technical phone screen
- Onsite

Types of Interviews

- Algorithms
- Coding
- Practical
- Systems Design
- Culture

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- **Systems Design**
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Types of Interviews

- Algorithms
- Coding
- Practical
- Systems Design
- **Culture**

Preparing for Interviews

Start with the Basics

- Practice decreases stress
- Choose a language
- Learn syntax, builtins, errors

Start with the Basics

- Know how to:
  - Create a function
  - Define a class
  - Work with strings
  - Work with lists
  - Work with trees

Start with the Basics

- Interview problems rarely have complex complexity
  - Constant
  - Logarithmic
  - Linear
  - Polynomial
  - Exponential

Build your Toolbox

- Many problems reduce to a few core concepts:
  - Recursion, Divide-and-Conquer
  - Graph Searches
  - Greedy Algorithms
  - Strings
  - Searching & Sorting
  - Dynamic Programming

Build your Toolbox

- Tools you have at your disposal:
  - Arrays, linked lists
  - Hash tables
  - Binary search
  - Shortest-path algorithms
  - Memoization

Simulate the Environment

- Time yourself, no cheating
- Look for patterns
- Practice with friends

During the Interview

Process, not output

The Icebreaker

- Take a deep breath
- Have an intro prepared
- Don’t ramble

Approaching Technical Problems

- Do not panic
- Tell your interviewer if you've seen the problem
- Ask clarifying questions

Approaching Technical Problems

- Always think out loud
- Talk through multiple possible approaches
- If helpful, draw a diagram

Approaching Technical Problems

- Try to pattern-match against what you know
  - Can we formulate this as a graph?
  - Can we formulate this recursively?
  - Can we use a binary search?
  - Can we decompose and memoize sub-problems?

Approaching Technical Problems

- Think general before specific
- If your solution seems too complicated, it probably is

Process, not output

Writing Code

- Constantly communicate
- Get *something* working
- Then, simplify and optimize
- Listen to your interviewer

Writing Code

- Decompose into functions as needed
- Use readable variable names
- Factor out common logic

Process, not output

Testing Code

- Be the computer
- Verbally reason about your code
- Look for bugs

Really Testing Code

- Write test cases
- Don’t just guess-and-check
- Print/debug relevant state to fix issues

Process, not output

Example Problem

Prompt

Let’s define a rotated array as a sorted array where the numbers have all been rotated to the right some number of places, with numbers wrapping around when they reach the end of the list.

[1, 2, 3, 4, 5] rotated 3 times is [3, 4, 5, 1, 2]

Given a rotated array, find the number of times it was rotated.

Approaching the Problem

- We are not panicking
- Confirm we understand
  - “So [2, 4, 6] rotated 2 times would be [4, 6, 2]?”
- Ask clarifying questions
  - “This list will only have sorted integers?”

Approaching the Problem

- Let’s look at the example again
  - [1, 2, 3, 4, 5] rotated 3 times is [3, 4, 5, 1, 2]
- We want to find the number where both the left and right are larger
  - This is just the minimum of the array! (Is it? Try another example)
- We could use linear search
  - Sure, but can you do better?

Approaching the Problem

- We are still not panicking
- Toolbox time:
  - Recursion, Divide-and-Conquer
  - Graph Searches
  - Greedy Algorithms
  - Strings
  - Binary Search

Approaching the Problem

- We are still not panicking
- Toolbox time:
  - Recursion, Divide-and-Conquer
  - Graph Searches
  - Greedy Algorithms
  - Strings
  - **Binary Search**

```
def count_rotations(rotated):
  low = 0
  high = len(rotated) - 1
  while low <= high:
   mid = (low + high) // 2
   if rotated[mid] <= rotated[high]:
      high = mid - 1
    elif rotated[mid] >= rotated[low]:
      low = mid + 1
```

```
def count_rotations(rotated):
  low = 0
  high = len(rotated) - 1
  while low <= high:
   mid = (low + high) // 2
   if rotated[mid] <= rotated[mid + 1] and
       rotated[mid] <= rotated[mid - 1]:
      return mid
   if rotated[mid] <= rotated[high]:
      high = mid - 1
   elif rotated[mid] >= rotated[low]:
      low = mid + 1
```

```
def count_rotations(rotated):
  low = 0
  high = len(rotated) - 1
  while low <= high:
   mid = (low + high) // 2
   if rotated[mid] <= rotated[(mid + 1) % len(rotated)] and
       rotated[mid] <= rotated[(mid - 1 + len(rotated)) % len(rotated)]:
      return mid
   if rotated[mid] <= rotated[high]:
      high = mid - 1
   elif rotated[mid] >= rotated[low]:
      low = mid + 1
```

```
def count_rotations(rotated):
  low = 0
  high = len(rotated) - 1
  while low <= high:
    if rotated[low] <= rotated[high]:
      return low
    mid = (low + high) // 2
    if rotated[mid] <= rotated[(mid + 1) % len(rotated)] and
       rotated[mid] <= rotated[(mid - 1 + len(rotated)) % len(rotated)]:
      return mid
    if rotated[mid] <= rotated[high]:
      high = mid - 1
    elif rotated[mid] >= rotated[low]:
      low = mid + 1
```

Writing Code

- Now, let’s run our code on the example input: [3, 4, 5, 1, 2]
- First we land on 5, doesn’t work
- 3 < 5, but 5 > 2, so we discard the left half
- Now we land on 1, which meets the condition!
- Answer is the index of 1, which is 3

Runtime

- Keep thinking out loud
- Binary search is O(log n)
- One last check for bugs

After the Interview

The Reverse Interview

- Have questions ready in advance
  - “What does your typical day-to-day look like?”
  - “Tell me about your team culture.”
  - “What would you change about your team?”
  - “What’s something you were proud of shipping recently?”
  - “What has your path at this company looked like?”

Don’t Worry

- Interviews are high-variance
- Everyone bombs them
- They are not fun
- Each interview is an opportunity to get better

Takeaways

Takeaways

- Have the basics down
- Build your toolbox
- Do lots of realistic practice problems
- Communicate a solution before writing code
- Verbally run your code and look for issues

Process, not output

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