Delhivery Placement Drive

Date : 6th September, 2018

About

Delhivery is India's leading e-commerce enablement company, where we use technology to drive supply chain innovation. Our mission is to fulfil all of India's online consumption demand through best-in-class industry solutions, domain expertise and pan-India operations. We provide an array of products and services for on line businesses - including online channel integration, sourcing, catalogue management, inventory management, multi-city fulfillment, express shipping, same day delivery, reverse logistics, offline payment collection and processing, customer support, social media engagement and channel analytics.

Job Description

Profile : Backend Developer , Associate Data Scientist and DevOps Engineer (SLI + FTE)
Roles and Responsibilities :
1. Click here for JD of Backend Developer.
2. Click here for JD of Associate Data scientist.
3. DevOps Profile : Participate in architectural sessions, assist development team with Schema design, indexing strategy for performance and scalability. Lead the maintenance of Postgres / Mongo databases in a highly available architecture hosted on AWS servers. Automate DB / Server maintenance activities. Setup backups / replications / archiving, implement disaster recovery. Manage patches / software upgrades. Research and apply new technologies and best practices.

Eligibility

CGPA: >=5 (no active backlogs)
Branch: CSE | ECE | CCE

Procedure

1. Online Test (Aptitude + Technical)
2. Technical Interviews (2)
3. HR Interview

Result

Total No. of Selections : 14

Backend Developer : **Meetasha Gaur, Kanak Singhal, Sparsh Agarwal, Akash Pareek, Siddharth Sharma. Achint Sharma & Rajat Kumar Agarwal**

Associate Data Scientist : **Shubham Sethia, Devendra Samatia, Akshat Airan, Abhinav Jain, Harsh Pant**

DevOps Engineer : **Saksham Saxena & Rishab Tayal**

Feedback by Company

Associate data Scientists : Try to motivate students towards OPERATION Research. Weakness of students - lack of practical knowledge and CSE students are unknown to probability and statistics. Very generic project (everybody is doing same kind of project) also Students should focus on optimization. As of now all the students know basic of datasciences but not the practical approach.

Backend Developer : 1) Little more focus on basics and fundamentals for eg- students have really good exposure in data structures but on some other areas found above above average 2) Students should also focus on networking as currently they were not able to answer questions related to networking

Interview Experience 1

By :- Sparsh Aggarwal (Backend)

Round 1 (Online Test):
This round comprised of 49 MCQs and 3 Programming questions (Test Duration - 2.5 Hours, Platform Hackerearth).
The MCQs were of different marks.The MCQ part was mainly for those who were interested in Associate Data Scientist Profile and mainly consisted questions on Probability , Distribution functions , machine learning etc.10-15 MCQs were from computer science fundamentals mainly from data structures.
Programming Questions:
1. Given a directed Graph find a node in the graph such that if we start a dfs from that node we can reach maximum number of nodes (20 marks).
2.There a t test cases.For each test case, given two numbers m,n and a prime number p.You have to count number of times p occurs in the prime factorization of all numbers in the range of [m,n] (20 marks).
Constraints: t<10^5 , m,n<10^9 , p<;10^6
test case: m=6 n=8 p=2
ans : 4(6=2*3,7=7,8=2*2*2 therefore count of 2 is 4)
3.Given a string consisting of * and # and two variables r1,r2.Starting from the first index of the string you have to find minimum number of steps required to reach the last index without landing on a * character index.You can move from every * marked index i to (i+1) and (i+2) in one step.Also you can move to (i+A) if (A/i)>=(r1/r2),where A is the number of prime numbers from 1 to i.Print "No Way " if it is impossible to reach the nth index. (50 marks)
test case: string = #*###### r1=1 r2=2
ans : 3(1->3->5->8)

Round 2(Technical Interview 1):
Firstly, he asked me to rate myself out of 10 in DS,OOP,DBMS and OS.He started with DS and asked 3 questions:
1. Print left view of a binary tree.
2. Find Maximum element in stack at every instant.
3. Find reference of the middle node in a linked list having odd number of nodes. Then, he started discussing my projects.I made a online movie booking portal using java,jsp,servlet and Mysql.He asked me to draw the class diagram of the project and mention all relationships between the classes.We discussed the diagram ,he pointed some mistakes and suggested some changes.Together we came to a solution. Then he asked some questions based on jsp,servlet and tomcat server. Then he asked me to design a database for such a system having 3NF normal form and how will we do indexing.We discussed my solution and we together reached a solution. This round went for about 1.5 hours.

Round 3(Technical interview 2):
This round was mainly focused on Computer Science Fundamentals.He first asked me my favorite and weakest subjects.Then he said he will ask questions from my weak part.I told him i was weak in computer networks and OS.Following questions were asked.
1. Tell me about DNS and what happens when we write a url.
2. He asked me to name the layers in the OSI model and asked some basic questions like
on which layer TCP works and on which layer HTTP works.
3. What is Virtual memory and why it is needed?
4. Difference between mutex and semaphore?
5. Readers Writers Problem and its solution using semaphores.
6. Fibonacci recursive implementation.
7. It is a database question.He said that there a 3 attributes user,role and permissions.one role can be given to any number of users but each user will have one role.Each role can have many permissions.Design a database for it and normalise it.He then asked one query how will you find all permissions of a user.
8. Joins in SQL.
The interview went pretty well.I would say if you don't know some question directly say NO and don't bluff.This round went for 40mins.

HR Round
Firstly he asked me tell me about yourself.Then he asked my strengths and weaknesses and whether I am a team player or not.He asked me about competitive progamming and my achievements there.
I had to wait for 5 hours for the results and that wait was finally over when I got to know that
I was selected.It was one of the best moments in my life.

Interview Experience 2

By :- Kanak Singhal (Backend)

Round 1: 49 MCQ questions related to Data Science and Programming
Coding Question:
Question 1:
Given a Directed Graph at most 1 edge coming out of it.Find the node if started traversing from that node covers the maximum node. (20 marks.)
(Hint- DFS from every node output which will cover maximum nodes.) (Try brute force).
Question 2:
There a t test cases.For each test case, given two numbers m, n and a prime number p.You have to count number of times p occurs in the prime factorization of all numbers in the range of [m, n] (20 marks).
Constraints: t<10^5, m, n<10^9, p<10^6
Test case: m=6 n=8 p=2
Ans : 4(6=2*3, 7=7, 8=2*2*2 therefore count of 2 is 4)
Question 3:
Given a string consisting of * and # and two variables r1, r2.Starting from the first index of the string you have to find minimum number of steps required to reach the last index without landing on a * character index.You can move from every * marked index i to (i+1) and (i+2) in one step.Also you can move to (i+A) if (A/i)>=(r1/r2), where A is the number of prime numbers from 1 to i.Print "No Way" if
it is impossible to reach the nth index.(50 marks)
Test case: string = #*###### r1=1 r2=2
ans : 3(1->3->5->8).

Round 2(Face to Face)
So In this interview like other interviews i was expecting tell me about yourself but no he started like thing you are most proud of in your CV.
. Tell me about your projects.
. Coding question -
you are given
name value
A 1
A 3
B 1
B 6
B 7
B 1
B 6
C 87
C 1
C 6
N 7
U 45
Print:
A 1
A 3
B 1
B 6
C 87
C 6
N 7
U 45
Basically first and last of every occurrence and there is only one then print only first occurrence.
It is an easy question. I wrote the bug free code so he was impressed.
Question 2 (Nightmare for me)
Given: 5+3*2-1+8*7
generate all possible combinations
like one possibility would be (8)*(2-1)+(56)
=8*1+56=8+56=64
or
8*(57)=google it idk.

I tried very hard but couldn't solve it. He made me solve it for 30 minutes and tell him the approach but i was unable to do it. I was very scared after that one as this was bad sign.
Question 3)
Tell me different about types of Inheritance
Question 4)
Tell me different about types of Polymorhism.
Question 5)
You are given some interfaces and a class implements them all, find number of interfaces implemented
PS:- If you understand this one explain me as well
Question 6)
Difference between windows and Linux
After asking these questions he asked me do you have any questions for me so i asked him what kind of language do you use in the company and the projects
for 15 minutes he explained me different micro services used in Delhivery and how they interact with each other and what will happen if one fails.
After This discussion i was really interested in the projects of Delhivery.
After this round i was convinced i will not make it through it but I don't know how my second round happened

Round 3
Then comes this guy he asked me to rate my Computer Science Subjects how much i know about them. I rated Data Structures and Algorithms at the top and Computer Networks and OOP, last and Second last.
Obviously he started with Computer Networks
Explain what happens when you hit google.com.
Explain Domain Name System
Then I told him i am not comfortable with CN course.
SO then he moved to OOP
Asked me about Diamond Inheritance Problem.(I Didn't Knew) and solve it.
Then every OOP concept you think of(Learn OOP please if you want to join Delhivery)
Then he moves to DBMS
Different types of Joins in DBMS
Asked me to write code for joins in MYSQL.(He helped me through it Kinda cool guy though).

Then At last DS and Algo(Not very hard i would say it was more of a discussion than an interview)
. Explain Tail recursion.
. What is DP? Why do we memoize?
. Binary Search question and implementation
. Print matrix in spiral Order and code.
After this what are your expectations from Delhivery
I told him what i understood in first round different microservices.
I said i want to understand how they work.

HR round
Asked me about my Strength and weakness answer very carefully they will seriously make you sweat if you think you cannot defend what you say.
He asked me about my projects
Why do you want to join us?
Any questions?

Interview Experience 3

By :- Meetasha Gaur (Backend)

Delhivery had 4 rounds, one was coding, 2 technical rounds and 1 HR interview.

Coding Round:
It had 50 MCQs and 3 coding questions.
1. First question was to find out the minimum number of jumps to reach from A to B avoiding the obstacles.
2. Given a Directed Graph at most 1 edge coming out of it. Find the node if started traversing from that node covers the maximum node.
3. There a t-test cases. For each test case, given two numbers m, n, and a prime number p. You have to count a number of times p occurs in the prime factorization of all numbers in the range of being, n]

Round 1:(Technical)
1. Reverse a linked list.
2. Questions on process and threads.
3. Rest APIs
4. My project was on Ruby on rails so he asked me basic concepts of ROR.How controller and models work.
5. Explain MVC architecture.
6. Javascript scopes and difference between ES6 and basic javascript syntax.
7. He asked me to explain the databases I used in my project and explain the relationship between the tables.
8. File indexing and asked me to index a table using a primary key.

Round 2:(Technical)
First he asked me to priorities my subjects.He asked questions on Data structures, Dbms, Os and CN.
1. Find the subarray such that the sum of subarray is half of the sum of array.
2. https://www.geeksforgeeks.org/dynamic-programming-set-6-min-cost-path/ .
3. How to check if a Binary tree is BST.(Hint: find inorder and it should be sorted)
4. Make a Binary tree using preorder and inorder.
5. Call by reference and call by value.He asked me some tricky questions on pointers.
6. Scheduling algorithms in OS and what the drawbacks of each one of them.
7. ACID properties and normalization in dbms.
8. He asked me to explain all the constraints in Dbms.

Round 3:(HR round)
I started by introducing myself and the 15 minutes interview was based on that.
1. I am a frontend developer so he asked me why am i applying was a backend profile.
2. Future plans
3. 3 weakness and what am i doing to avoid those.
4. 3 Reasons why they should hire me.

Interview Experience 4

By :- Harsh Pant (Data Science)

First Round:: Online Test
49 MCQ (Data structures , Algorithms, Random Variable, Very basic Concepts about Machine Learning, Very basic Operating system, Probability Theory)
3 Coding questions
All those who qualify this particular round would appear for personal interviews.
2 Technical rounds followed by an HR round

First technical round:

- Very basic probability Question (Bag A contains 5 black balls and 3 white balls; Bag B contains 5 white balls and 2 Black balls. A ball is transferred from Box B to Box A.. What is the probability of drawing a black ball from box A)
- What is the probability of getting exactly one head if a coin is tossed thrice?

- What is the probability of getting exactly three heads if we toss a coin a coin 100 times?
- Classic 0-1 Knapsack Problem
- Suppose I have 'n' number of coins for which the iTH coin has a probability p_i for getting head then what is the probability of getting exactly k heads (NOTE:: All coins have different probability thus combinatorics doesn't work).....(HINT :: think recursively bit like Knapsack)
- How does Gradient Descent Actually work
- What is padding, strides, filters with reference to CNN's.
- Logistic Regression
- QuickSort Algorithm
- Given an array A[] and a number x, check for pair in A[] with sum as x

Second Technical Round::

- Travelling SalesMan problem
- Questions based on Linear Equations
- Find maximum and second maximum element from a array
- Fastest possible sorting algorithm for small numbers
- Binary Heap data structure

Interview Experience 5

By :- Siddhart Sharma (Backend)

Round 1 (Online Test):
This round comprised of 49 MCQ's and 3 Programming questions
The MCQ's were of different marks.The MCQ part was mainly for those who were interested in Associate Data Scientist Profile and mainly consisted questions on Probability, Distribution functions, machine learning etc.
10-15 MCQ's were from computer science fundamentals mainly from data structures.
Programming Questions:
1). DFS graph
2. You have to count number of times p occurs in the prime factorization of all numbers in the range of [m, n].
3. A combination of DP and sieve question.
For all programming questions, constraints were quite tight, so you have to write the optimized solutions

Round 2(Technical Interview 1):
Firstly, he asked me to rate myself out of 10 in Algo&DS, OOP, DBMS and OS. Interviewer started with DS and Algo.
1. Print right view of a binary tree.
2. For a given strictly increasing sequence, deduce BST of max width and min height
3. How to get getmax() be done in O(1) in stack.
For all above questions, I have to write pseudo code as well Then he moved onto OS.
1. He asked me to write producer-consumer problem.
2. What is thread pool ?
3. Lot of discussion on multi-threading
Then, he saw my projects.I made Library management using Python, django, mysql.He asked me to draw the class diagram of the project and mention all relationships between the classes.We discussed the diagram, he pointed some mistakes and suggested some changes.Together we came to a solution. He also told me to explain few codes from internet written in python as python was all over my resume. This round went for about 1.5 hours.

Round 3(Technical interview 2):
This round was mainly focused on Solving puzzles. With the interviewers help I was able to solve almost all puzzles. And there were few more questions on python and multi-threading. This round went for 30mins.

HR Round
Most of the HR round was about my personal interest "Anime". He asked me about my favourite anime. "Dragon ball z" :P . And then he asked me what you have learned from the anime and how would you apply it to your technical life. This round was not more than 15 mins.

Interview Experience 6

By :- Saksham Saxena (DevOps)

There were two technical rounds on Google Hangouts. The company offered only SLI for Devops profile.

Round 1 (35-40 min): Questions like Brief me about yourself, Why Devops? started the tempo of the interview. Then, he went through my resume thoroughly. Asked about my hands-on experience on Devops tools like Docker, Ansible, etc (since it was mentioned in my resume). What do you understand by Cloud Computing? Any experience on any public cloud? Then, he asked in-depth stuff from my projects just to check my basic understanding and loyalty towards the project. He got impressed by the projects and my answers so he shifted the interview into an informal direction where he asked about things except Devops that I like. (Basically Hobbies and Interests)

Round (25 min): This round was more of technical + managerial one where the interviewer started of with my introduction and checked my passion towards this field. Then, he explained the working of Devops team at Delhivery which was quite impressive. Then, he asked about my projects and was impressed by them. Then he asked Why Devops? Why not only development or core electronics? What all tech stacks have you worked upon and what technology do you know? What are the things you wish to learn?
After my answers he was impressed with me and with a grin asked me when I can join them and that he is eager to work with me in person which brought a big smile to my face.
After 10-15 min, I was told that I got selected.
Things you should know:
1) OS and CN.
2) Atleast one scripting language (Python, Bash, Perl).
3) Atleast one automation tool (Ansible, Puppet, Chef).
4) Hands on experience on any public cloud is a plus. (preferably AWS)
5) Knowledge about Docker and Kubernetes is a big plus.
Tips:
1) Be thorough with what you have done.(Resume)
2) Stay Confident
3) Don’t answer if you don’t know about something.

Interview Experience 7

By :- Rishabh Tayal (DevOps)

Round 1 (Google hangouts Technical - Interview) (45-50 min)
The complete interview was from my resume. He was actually sort of impressed from the different things i had done. His first question was from my summer project -
1. “you have done quite a few things in this project, so can you explain me how exactly will you provide SAAS(Software as a service) to client using Dockers?”, then there were 3-4 follow-up questions, like i) Why Dockers? ii) Explain PAT(Port address Translation)
2. Explain your summer project (my summer project was to implement. Different services like SAAS, CAAS, PAAS, STAAS and setting up of hadoop clusters and automating them using Ansible) Follow-up questions - i) How did you set up hadoop clusters? ii) Explain Map-reduce?
3. Explain your BTP ?(my BTP project was Prepaid Energy meter) follow-up questions - i) How did you manipulate the electricity meter ii) How did you take the readings?
4. How to create a Docker file? I had done cleared 2 Red Hat Certifications and he was very impressed
with that and at the same time he expected me to answer everything related to them (as certification comes with responsibility)
5. Questions from Red Hat Certification of Ansible Automation
i) How to check hosts? (you should know host file location and command to list hosts)
ii) What are Ansible-playbooks, how to create them?
iii) Create a ansible-playbook to install web-server?
6. Questions from RHCSA (Red Hat certified system administrator)
i) how will you give permission of Read-only to Others (ans- xx4)
ii) how to visualize packets transfer in linux? (ans - #tcpdump)

Round 2 (Managerial cum HR round - this too was on google hangouts) (20-25 min)
1. Tell me about yourself? 2. Why Dev-Ops? 3. For how long have you been into Cloud-Computing? What have you done until now? 4. What are the different skill-set or technologies that you have been through so far? 5. Will you be comfortable with different technologies? 6. Will you be comfortable working at different locations? (Bengaluru, Gurugram)
7. Anything you would like to ask?

PS : Interviewer dosen’t expect you to tell him everything but he sure does expects you not to bluff with him, you should go through your resume thoroughly, you should know about your projects in detail.

Question Bank

Round 1 : DATA SCIENTIST

1. Project Details
2. Knapsack
3. CNN
4. Logistic Regression
5. What is gradient descent
6. Cost function of logistic regression
7. Sigmoid function
8. Find max k element in an array
9. Min heap and max heap
10. Gaussian distribution probability structure
11. How to calculate probability (baysoan, condition, joint, marginal)
12. What is correlation and how to check it?
13. Confusion matrix and define recall and precision?
14. SQL queries?
15. Random forest(In depth)
16. Linear regression(in depth)
17. Feature selection
18. Overfitting handling
19. Outlier handling
20. Probability question(Card, coin)
21. Probability curve distribution
22. Data skewness
23. Explanation and working of machine learning algorithm?
24. Precision recall accuracy
25. Three containers, divide water such that equal in all three(Array of numbers)
26. Given n(no of elements), u(average), variance if we add 5 to all elements find new average and variance
27. Coin tossed 100 times probability of 10 heads if head occurs 90 times on coin biased?
28. Null hypothesis and alternate hypothesis for coin being biased or not in coin toss experiment?
29. Explain SVM, Kanel trick objective function of naïve Bayes?
30. How to handle new features in naïve Bayes?
31. How to handle underflow in case of product of probability taken in naïve Bayes?
32. Kth largest element in array?
33. Accuracy precision, recall
34. A tree is stored in database , data structure is like
Write function in SQL that when given a node output all the node that are its children, grandchildren so in.
35. SQL most recent update
36. Linear programming and random classifiers
37. What is winning probability when we throw a dice and first person who gets six wins?
38. What is the probability of getting 16, 65 when throwing 100 dice?
39. What is probability of getting a black ball when we have 3R and 4B ball in 1 box and 3R and 9B in other, we randomly draw one ball from 1 box and put in second?
40. What is SUM, decision tree
41. Give the mathematical equation for maximizing profit when a company make shirt and pants?

Round 2 DATA SCIENTIST

1. Project Details
2. Random forest optimization
3. Which node will you use to solve problem of fraud delivery detection?
4. ROC curve
5. Anomaly detection
6. Normal distribution from a back box recovery mechanism

Round 1 : BACKEND DEVELOPER

1. Project Details
2. BST, insertion deletion
3. Which data structure is best to use to find a number in a range
4. Private constructor, destructor?
5. Graph, stack(Balanced parenthesis)
6. ACID properties
7. Basic OS
8. Context switching
9. Which data structure is best for a certain problem
10. Max in stack
11. Middle element of linked list
12. Left view of BT
13. (A,3),(A,4),(A,5),(B,1),(B,2),(C,1),(D,3),(D,4),(D,6),(D,8)
Print (A,3),),(A,5), ,(B,1), (B,2), (C,1), (D,3),(D,4),(D,6),(D,8)
14. 5*3+2+6*2
Print all possible answers
15. What is different types of inheritance?
16. Tell me about polymorphism?
17. There are many interface and one class implement them all, count all interface implemented
18. Tell the thing you are most proud of
19. What is difference between windows and Linux?
20. WLLWLLWW for W he gets 1$, for L he losses the money
To play he paus 1$ I he won last time or he pays double the amount he paid last time
21. Given an array find all subset of array such that sum is equal to the (sum of array)/2
22. Processive thread, interface vs abstract class, TCP vs UDP
23. Quick sort
24. IP address, Semaphore, mutex
25. Polymorphism where did you implement in project
26. Reverse a Linked list
27. Polymorphism
28. ER diagram
29. Design a database
30. Multithreading and process
31. BFS of tree? How to convert into DFS?
32. Oop's; class, object, abstraction, polymorphism, encapsulation, inheritance
33. Example of polymorphism
34. Overloading and overriding
35. Candidate key and unique key
36. Multiprocessing and multithreading
37. Print left view of binary tree
38. Construct binary tree and BST from sorted array
39. Design pattern
40. Calculate factorian in unsorted array?

41. What is a thread?
42. Design a BST from sorted array of maximum thickness.
43. GIL in python
44. Design OOP for library management?
45. Producer consumer problem
46. Database queries, implement all ER diagram, tables and relation then perform queries on tables
47. Multithreading and multiprocessing with real life example
48. Caching in database, mutex and locking in database queries
49. Queue using two stack and optimize both, insert and pop in O(n)
50. Two number are missing from a given sequence and find them(1,2.....,N)

Round 2 BACKEND DEVELOPER

1. Project Details
2. Design a database system of library management
3. IP address DNS
4. Database index
5. Google founder, UNIX author
6. Print matrix in spiral order
7. Unsorted data given 10,20,1,6,3,8,2,9
Optimize range queries, do binary search and sorting
8. Explain DNS in CN
9. Diamond inheritance problem
10. Design hash data structure
11. What will you go when you join delhivery?
12. Basic DBMS
13. Basic OOPS
14. Cache design; Data structure and complexity
15. Mutex, semaphore readers writers problem
16. If in an array find the subarray whose sum is (sum of A)/2?
17. Find if binary tree is BST
18. Multiprocessing and multi-threading
19. Reverse linked list
20. Normalization
21. Keys consistent
22. HTTP protocol
23. Basic CN
24. Scheduling
25. Horse and track puzzle
26. Blind man and 3 color ball of 3 types puzzle
27. Python advanced concept

DevOps

1. Project Based
2. Linux ->; NFS, SSHFS
3. Cloud exposure ->; Public, Private
4. Server Understanding
5. What is Docker files
6. Software as a service (How will you deploy Firefox for client?)
7. Ansible Automation:
a. How to make playbooks
b. How to start web service
8. Certifications (RHCSA)

HR ROUND

1. Strength and weakness
2. Give example of strength and weakness
3. Are you a team player? Give example of incident
4. Why 1 page resume?
5. Competitive programing achievements
6. 3 points why should we hire you?
7. Dream job and why this company?
8. Why not any other profile?