

United Experience (Associate Data Scientist)

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The interview process consisted of total 5 rounds and all rounds were eliminative. The details of each round are as follows: -

Round 0: Resume shortlisting based on academics and resume

Round 1: Online Assessment (1.5 hours) – 17th November 2022

As the first round a five-section online assessment was conducted. Each section was individually timed. The topics of the sections were as follows: -

1. Logical Reasoning
2. Numerical aptitude
3. SQL
4. Excel
5. Data and graph interpretations

All successive rounds were conducted in offline mode on **21st November 2022**.

Round 2: Pen and Paper Test (30 minutes)

This was a simple MCQ based pen and paper test. It consisted questions on basic Python coding (mostly syntax and basic programming), probability and statistics. Some of statistics questions were based on hypothesis testing and central limit theorem. Python and probability questions were very easy but the statistics portion required some prerequisite knowledge about the core statistics topics.

Round 3: Technical Interview (30 minutes)

There were two interviewers in this round. They started the interview by asking me about my introduction. Afterwards, they gave me two simple python programming questions that I had to write the code for on paper.

1. *Write a function to swap the first and the last element of a list.* This was a fairly easy question and I was able to do it in less than a minute. After checking the code, they proceeded to the next question.
2. *Invert a python dictionary:* The problem was to write a function which takes a dictionary and returns an inverted a python dictionary, such that for each key-value pair, the new dictionary would have old value as key and old key as value. I took a minute to think and discussed with the interviewer any assumptions that I have to take about the input domain. After clarifying all my doubts, I wrote the code in 2-3 minutes. Then, they asked me how my code

would fail if the previously taken assumptions were removed. I explained my answer to them. They seemed satisfied.

Then, they proceeded to ask me about the projects I had mentioned in my resume.

Then they asked some ML related questions:

1. How does KNN algorithm work? How an optimal value of K is chosen?
2. Why do we do normalization of data?
3. Explain the difference between standardization and normalization.
4. How does a Neural Network model works? Explain the backpropagation algorithm.

I had done lots of practice of ML related questions as part of extra courses and curriculum, thus I was able to answer all the questions comfortably and the interviewers seemed satisfied with my answers. Then they asked me if I had any questions for them. I asked about the ML applications within their company and data privacy issue. They had a good discussion with me on those topics. After that, the interview round ended.

Round 4: Case Study based Technical Interview (50-60 min)

This round was taken by three interviewers. The interviewers were very friendly and had a lightened conversation in the first few minutes. Then they asked me which ML field I feel inclined towards the most and why. I answered this question confidently. Afterwards, they gave me a case study to work on.

***Case Study 1:** Given an airlines data containing the arrival times, departure times, source and destinations, and other flight related information. You have to create a model for predicting the price of the airline ticket. How would you go about it?*

Initially, I was a little perplexed as this was my first data science case study in an interview. I asked the interviewers for a minute to analyze the given problem at hand to which they agreed. I then asked a few clarification questions regarding the dataset at hand. I was struggling a bit in understanding the dataset so they gave some hints to think along like

- What features would you be needing for the problem?
- How would you preprocess the data?
- What kind model would you use and why?

After thinking along the provided hints, I proposed my solution step by step and discussed lots of possible scenarios with the interviewers. I was bit stuck at few places but they seemed satisfied with my solution. Then they asked me how I would

prevent overfitting and the difference between lasso and ridge regularization. I answered it comfortably and they seemed satisfied.

Afterwards, they asked about some other projects that I had mentioned in my resume which were related to CNN. They asked me how CNNs work. I explained my projects as well as the follow up questions. They seemed satisfied.

Afterwards, they gave me another case study:

***Case Study 2:** During air travel, because of some human errors, there may be a problem of lost luggage for some passengers, where the passenger's luggage does not reach the intended destination but to some other airport. Detecting this error takes a lot of manual effort which causes great inconvenience to customer. Do you have any approach that can help in reducing the detection time if such a problem occurs and also in locating the lost luggage.*

I asked few clarification questions regarding the problem at hand and then quickly proposed a CNN based solution inspired from one of my projects. I found this problem very interesting and I thoroughly described the model, dataset required and the entire automation proposal to them. They seemed satisfied with my answer. Finally, the interview was concluded.

KEY TAKEAWAYS

1. Be honest and showcase only those skills in your resume which you know by heart. Revise projects and technologies used before the interview.
2. Practice data science case studies for data science-based interviews as they are heavily asked in interviews to assess your problem-solving skills.
3. Enhance communication skills and delivery of ideas, to present your solution to the interviewers in an easy and understandable manner.
4. Be open-minded and open to many possible solutions. This would help you in thinking about case studies in innovative and creative ways.
5. Don't panic if you don't know or can't recall answer to some questions. Reply confidently and politely that you don't know/remember it and move forward with the interview. Interviewer will give you plenty of opportunities to prove your knowledge.
6. Be confident and always keep a smile on your face as it keeps your stress levels down and reflects a positive attitude in front of interviewer.
7. Research about the company beforehand to connect with the company's culture and have an interactive conversation with the interviewer.