



A Guide to Help You Prepare for Your Data Scientist Interview at Flipkart

The Data Sciences team at Flipkart is on a mission to build systemic intelligence across Flipkart products and overarching ecosystem. Being India's largest online marketplace and the most downloaded e-commerce app in the country places Flipkart at a unique vantage point, giving our Data Sciences team a distinctive opportunity, i.e., to decipher the richest possible data about Indian consumers. In addition, the dimension of a vast product selection and proliferating seller-base opens a multitude of disruptive possibilities, holding the potential to solve for India.

In a nutshell, petabytes of daily data collected in Flipkart's data centres offer a dynamic mix of numerical, structured, unstructured, image- and audio-based statistics, all set to redefine the shopping trends of the future.

Data Science techniques adopted at Flipkart span classification, regression, clustering, matrix factorization, graphical model, tree-based models, network and graph algorithms, topic modelling, image processing, deep learning and NLP - each one of them being applied across large scale initiatives.

If you aspire to redefine 'state-of-the-art' and create an impact on India's online shopping landscape, Flipkart's Data Science team can offer you the right podium to solve challenging real-world problems and take a giant leap in your career as a Data Scientist.

Interview Process

Phase 1: Pre-onsite Interview

- Exploratory Discussion
- Technical Phone Screening

Phase 2: Onsite Interview

- Presentation Round
- Hands-on Skills
- Depth in Data Science
- Depth in Mathematical Modelling
- Team Fitment
- Culture Fitment

PHASE 1:

Exploratory and Phone Screening Rounds

ROUND 1.1: EXPLORATORY DISCUSSION (30 MINUTES)

This is the stage when you'll be interacting with your potential Hiring Manager. As soon as your CV is shortlisted, your recruiter will set up an exploratory discussion based on your availability. The intent of this round is to understand your past experience, expectations and aspirations for the future.

This round is typically conducted over phone/Hangouts. Please ensure that you're comfortably settled in a quiet space for a fruitful discussion. You will be expected to introduce yourself, your past work experience, strengths and aspirations in this round - be concise, clear and prepared.

Take this opportunity to ask as many questions as you want in order to get a holistic picture of the role. Make sure that you clearly understand the charter, your kind of work involved in the role offered by us. Have a constructive and open discussion on scope, eligibility, aspirations and other concerns that you possibly have.

Note: Exploratory discussion with the Hiring Manager depends on a case-to-case basis. Your recruiter will walk you through the detailed hiring process.

ROUND 1.2: TECHNICAL PHONE SCREENING (60 MINUTES)

Before you come for an onsite interview, you'll have a discussion with one of your potential peers. This is a technical screening round which is primarily focused on past work experience, role-eligibility and a few problem-solving questions relevant to the role you're being interviewed for.

This is a telephonic/Hangout discussion. You can expect questions about your past experience, major projects that you've worked on depending on the role you're being evaluated for. The interviewer may deep dive into one of your projects that you have executed in the past to understand your strengths and weaknesses.

Please ensure that you are available for the call in a quiet place. Be well-versed with everything mentioned in your resume. Have a brief introduction of your experience ready. Go in-depth if interviewers ask you details about anything specific.

Note: You may or may not have this round depending on a case-to-case basis. You may have more than one technical phone screen round if need be. Your recruiter will walk you through the detailed hiring process.

PHASE 2:

Onsite Interview

ROUND 2.1: PRESENTATION ROUND (60 MINUTES)

In order to better understand you and the work you have done in the past, we give you an opportunity to present any work of your choice which you have completed in the past. The presentation round is only applicable to candidates who have done significant work or have research experience. It is crucial since it sets the stage for the rest of the technical discussion that you will have at Flipkart.

You will be given 45 minutes for the presentation and the remaining 15 minutes will be set for a Q&A session. All the Data Scientists at Flipkart are given an open invitation for the presentation round. The presentation round is typically online over a video conferencing system. The details of the schedule will be provided to you by the recruiter. You are also expected to provide the title and abstract of your talk several days in advance so that interested data scientists can plan their schedule and attend your talk. The discussion is interactive in nature.

HOW TO PREPARE FOR THE ROUND:

Always try and choose a project on which you've worked extensively and can discuss in detail

Try to present an in-depth analysis of your work along with relevant technical details

Introduce yourself and walk the interviewers through your Data Sciences career so far

Talk about projects that you've worked on in the past and the role you've played there

ROUND 2.2: HANDS-ON SKILLS (120 MINUTES)

The Data Scientist community at Flipkart is trying to solve many challenging machine learning and artificial intelligence problems. It combines versatility with various tools and techniques which enable better understanding of the data and hence, leads to better modelling.

In this discussion, you'd be provided with a dataset and an accompanying problem statement. You're being evaluated on your ability to understand and solve the problem by understanding the data and modelling the solution in the best possible manner. As a candidate, you are expected to explain your observations on the data and defend your choice of modelling. You'll be provided access to the Internet for web searches during the course of this discussion. At the end of this round, you will be expected to submit the code.

You are expected to bring your laptop with the machine learning tools and toolkits of your choice. In case there's any doubt, please feel free to reach out to your interviewer about the acceptability of a toolkit. Please refrain from using complete solutions available online or on your codebase (for instance, from your earlier projects) and instead restrict yourself to standard machine learning libraries.

Note: In case the discussion is not complete within 2 hours due to unforeseen factors, in such cases, upon your request, we can allow you to retain the dataset for a couple of days so you can complete your analysis and modelling.

HOW TO PREPARE FOR THE ROUND:

Please discuss your thoughts with the interviewer as you analyse the data and solve the modelling problem

Spend enough time to understand the problem and analyse the data

ROUND 2.3: DEPTH IN DATA SCIENCE (60 MINUTES)

In day-to-day work we seldom get a problem statement with a well-prepared dataset accompanying it. The focus of the round would be on your ability to translate an unseen fuzzy problem into a concrete problem statement and solution approach. The interviewer will give you an abstract business problem related to a real-world problem faced by Flipkart, followed by an in-depth discussion on how you would think through such a problem.

The intention of the round is to understand your thought process by having an in-depth discussion on how you would go about solving a real-world problem. You are expected to ask the right questions and drive the required formalism in modelling, while also defining the right evaluation and experimentation setup to address the fuzzy business problem. In this discussion you won't have access to the Internet and you would be working on a whiteboard.

HOW TO PREPARE FOR THE ROUND:

Walk the interviewer through how you would formulate each stage of a machine learning problem to get it into production

Provide alternative approaches to solving the problem and discuss their pros and cons with the interviewer

ROUND 2.4: DEPTH IN MATHEMATICAL MODELLING (60 MINUTES)

Being a Data Scientist involves understanding the relevant literature around the problem statement, the underlying mathematical formalism, and tweak, innovate and apply the mathematical concepts to various business problems. The focus of this round would be on your mathematical understanding of an area of your choice, preferably the one discussed in your presentation. You will have an in-depth discussion around the mathematical fundamentals in an area of your choice. The interviewer may present you with a requirement that needs to be changed to formulation based on changes in the business requirements.

You would be assessed on your intuitive understanding of the technical domain and your ability to formally present any modifications that may arise during the discussion. In this discussion, you will have access to the Internet for occasional referencing and it is typically conducted with access to a whiteboard at the Flipkart campus.

HOW TO PREPARE FOR THE ROUND:

A strong foundation in the theoretical aspects of machine learning in the domain of your expertise would be beneficial

An ability to conceptualise abstract notions into concrete mathematical formulation is expected

ROUND 2.5: TEAM FITMENT (60 MINUTES)

The intent of this round is to evaluate your team fitment based on your experience, interests and strengths demonstrated across other rounds. In this round, you'll be interacting with your potential team leader/hiring manager who will try to get to know you better in order to make an informed choice that we hire the right person for the right job.

The interviewer will try to understand your aspirations, inspirations and motivations, self-awareness, leadership ability, stakeholder management, strengths and weaknesses, etc.

You can also expect questions around some of the competencies which you would have been evaluated for in previous rounds. Think of this round as a summary of all the discussions that you have had during the day.

ROUND 2.6: CULTURE FITMENT ROUND (60 MINUTES)

We are a proud community of Flipsters. All our decisions are deeply rooted in our values, and they have made us into what we are today - successful and everything. Our core values define our identity and form the basis of our actions and reflect in everything that we do at Flipkart. These values enable us to shape the desired organization culture in which each Flipster can thrive and be at their best.

In this round, you are being evaluated for your cultural fitment at Flipkart. The round is meant to assess whether you would be a good fit in the world of Flipsters or not. There are no right or wrong answers. Be honest and think thoroughly before you answer. There may be questions around your past experiences, career aspirations, hypothetical scenarios, your strengths and weaknesses, etc. We highly recommend that you invest some time in preparing yourself for the interview.

- Read up about our values and what makes you a great fit for us
- Be honest about your success and failures
- Invest some time in preparing yourself for the interview
- Be candid and help us understand you better

TECHNICAL TOPICS TO BRUSH UP ON BEFORE YOUR INTERVIEW:

The candidate is expected to be familiar with general machine learning principles such as bias-variance tradeoff, error analysis, cross-validation, train/test protocols, evaluation metrics and process.

In addition, the interviews will be focussed on the topics that the candidate is most familiar with. Below is a representative set of topics.

- **Supervised learning:** Topics include linear regression, logistic regression, Naive Bayes, support vector machines, decision trees, random forests, gradient boosted trees, Bayesian models, evaluation metrics for classification and regression tasks.
- **Unsupervised learning:** Topics include clustering algorithms, Expectations Maximization, Gaussian mixture models, and evaluation metrics for clustering.
- **Dimensionality reduction:** Topics include principal component analysis, singular value decomposition, and matrix factorization.
- **Deep learning:** Topics include back propagation, feed-forward neural networks, convolutional neural networks, recurrent neural networks, long short-term memory, auto-encoder algorithms and generative adversarial networks.
- Sequential models (hidden markov models), probabilistic graphical models (latent Dirichlet allocation, Gibbs sampling), NLP (named entity recognition, parts of speech tagging), optimization (Stochastic Gradient Descent), and Graph (community detection, label propagation).

Be prepared:

Needless to say, we want to hire the best talent. Prepare well, understand what we do as a business, the position you are interviewing for, learn how your role will contribute in achieving our vision and brush up your basics as much as possible. At Flipkart, we strongly believe that our highest leveraged time should be applied to hiring and helping onboard the absolute best talent that we can scout around the world.

Pique our interest:

Tell us something about yourself that prompts us to know more about you. Flipkart is a great mix of people with various talents and skill sets and so, we'd like to know how and why you stand out from the rest.

Think things through:

We don't necessarily look for absolute solutions. Instead, we'd like to know how you approach a problem. Therefore, make sure you think through your answers. It's okay if you need a few minutes to collate your thoughts. You can help the interviewers understand your thought process by thinking out loud.

Be authentic and candid:

Nobody is perfect. It's okay to openly admit past failures - if any. At Flipkart, we place intent and commitment over success. And, being honest about yourself will help us identify those traits in you.

Show your passion:

It's not an interrogation, it's a discussion. Blend in a lot of passion and energy in your interactions. Ours is a fast-paced and challenging workplace and therefore, there's no room for someone who takes it slow.

Ask questions:

We are open to all kinds of questions. It's the easiest way to get to know each other better. So, ask away!

Understand how we work:

Get yourself acquainted with our values: Audacity, Bias for Action, Customer First and Integrity. Our values are deeply rooted in all our major decisions at Flipkart.

Audacity:

We challenge established standards and keep pushing the boundaries. We innovate continuously and find disruptive solutions. We are fearless in trying anything new.

Bias for Action:

We strongly believe in taking initiative and driving results with impact. We make speedy decisions and believe in failing fast.

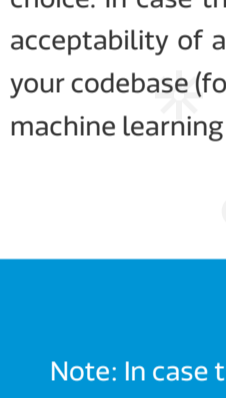
Customer First:

We continuously strive to understand our customers' needs. We validate our success through customer actions. We go deep into customer issues and resolve the root cause.

Integrity:

We strive to do the right thing, in the right way, at all times. We do not compromise on our values

If you are someone who believes in these values, and you're able to exhibit these values, you are a great fit for us. Reflect on your past experiences and prepare yourself well before the interview. Spend some time on identifying instances from the past when you exhibited these values.



**NERVOUS?
DON'T BE.**

HERE ARE SOME TIPS FOR A SMOOTH INTERVIEW:

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