**A 5-Step Checklist to Preparing for Data Science Job Interviews Outside of Academia**

**This checklist will help you successfully compete for a data science job in industry**



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Data science is a unique discipline that can take you from academia to industry and back.

While many of you get your training and perhaps even your first jobs in academia, it may not be where you want to stay for the rest of your career. Therefore, it’s important to begin preparing for how you plan to leave academia and enter a data science job in industry. These jobs could involve business projections, private scientific research, healthcare optimization, and much more.

These applications of data science are all varied, yet the types of interviews you can expect will follow the same formula. The one difference between a data science interview for a job in academia and a job in industry is the general interview. Technical interviews can be easily expected to be nearly the same across the board. However, general interviews where companies try to get a sense of who you are as a person and your abilities will vary from academia to industry.

Therefore, it’s vital to get a sense of how general interviews are conducted in industry and how you should be preparing for them. This will involve figuring out how to explain your research or previous education using jargon-free terms, researching the company you’re applying for, and determining good questions to ask at the end of the interview — because let’s face it, an interview is as much a chance for them to interview you as it is for you to interview them.

This simple checklist will help you ensure that you’ve ticked all the boxes required to successfully prepare for a general interview for a data science position in industry.

**1. Read, understand, and memorize key components of the data science job description**

This point seems pretty self-explanatory.

However, many recruiters I’ve talked to are always surprised when they interview candidates who have no idea what the role is, what the job responsibilities are, who the company is, and what kind of background requirements they’re looking for.

Therefore, it seems pertinent to remind you that reading and understanding the job description before applying is one of the key pieces to your success in getting a job in data science.

To go one step further, you must memorize some of the key components and keywords found in the job description. These components are there for a reason and will be what the recruiter is looking for you to touch on to show understanding and competence.

Having the ability to incorporate some of these key phrases and components into your responses is a great way to show that you’ve read the job description, you’re comfortable with what they’re asking, and that you feel that you could provide that ability to the company.

For example, if a job description lists technologies such as Excel, Python, and Tableau, you have the perfect segue to explain how you’ve used these technologies successfully in the past. Alternatively, if they’re looking for someone who can work as part of a team, you can describe a time that you resolved a team conflict. Furthermore, if they’re looking for someone who can develop predictive machine learning models, you can describe that time in university when you developed a model that predicted the bounce rate of visitors to a website.

**2. Do research not only on the data science role you’re applying for but also on the company itself**

Again, this point seems as self-explanatory as the first point, yet it still needs to be stated.

In my experience, recruiters are looking for someone who not only brings with them technical talent, but also the ability to melt into the company culture and team dynamic. What this means is they are looking for someone who is not only a good fit for the job but also for the company.

Therefore, it’s highly beneficial to recruiters if you can demonstrate an understanding of the company, its goals, its processes, and its beliefs right from the beginning of the interview. All of this information can generally be found on the company’s website or social media profiles.

Not only is this a great time to learn more about who you may be working for in the future but it’s also a good time to see if you would enjoy working for them. There’s nothing wrong with finding out that you genuinely disagree with a company’s mission statement and discovering that you don’t want to work for them. If anything, that saves you from a bad situation. Therefore, take the time necessary to really understand what a company is about and see if you could fit into their company culture.

In industry positions, data scientists can play a multitude of different roles within a company, which is why you must determine where you would fit into the grand scheme of things. Here are some [things I like to look out for](https://eugeneyan.com/writing/red-flags/) when researching a company:

* No clear roadmap as to how the data science team will deliver value to the company or the company’s clients.
* Misaligned expectations of data scientists — this can be found when comparing the job description with what can be found on the company’s website.
* A reliance on outdated tools or processes.

The key thing to note here is that this information may not be available on the website depending on how big a part the data science team plays within the organization. Therefore, the best way to find out information about the above points is by asking questions at the end of the interview, which is discussed in point 5 found below.

**3. Write down and remember important and data science-specific examples from your Bachelor’s/Masters/Ph.D. that resulted in something impactful**

As we have all been told, the value of data scientists is in the impact they make within their company. Whether that’s developing a new machine learning model that saves a company thousands or refining old algorithms to produce results faster, data scientists need to be able to hit the floor running and produce impact as soon as possible.

One of the best ways to demonstrate this during the interview is to highlight examples from your education that directly (or mostly) apply to the job.

This will involve going through old projects and theses and picking out a few key examples of how you’ve developed something impactful. As we’ll discuss in the next section, the explanations of these examples should be simplified such that anyone from any industry could understand what they did, how they worked, and why they worked.

Your examples should follow this format to ensure that a full picture of your work is given:

1. What was the goal of the project (what problem were you trying to solve)?
2. What kind of data were you working with?
3. How did you decide to solve the problem?
4. What did you create and how did it work?
5. Why did it work?
6. What were the results?
7. How were your results impactful (how did your results contribute to achieving the project's goal or solving the problem)?

Your answer to each point in the format should be no longer than one sentence. Succinct and clear should be two words that can describe your answer once completed.

Example: (1) *The goal of the project was to determine how climate change is affecting the North and South Poles more drastically than the rest of the planet.* (2) *Data for the project came from global circulation climate models which are* [*mathematical representations*](https://medium.com/predict/what-climate-models-tell-us-about-future-global-precipitation-patterns-e7b52d2447aa) *of each component of the climate system, including the atmosphere, land, ocean, and sea ice.* (3) *This project was solved by mapping the climate model data to see how rising atmospheric temperatures are concentrated near the poles and are less concentrated elsewhere, as well as the development of a prediction model to see how temperatures will increase in the future.* (4) *I created a machine learning model which was able to predict, given historical trends, future temperatures at the Poles.* (5) *The model worked because I had climate data dating back to the 1850s which provided a clear picture of the exponential increase in temperature around the world, particularly in the Poles.* (6) *The results found that we are headed for an increase in Polar temperatures in excess of* [*3.5 degrees Celsius*](https://www.nasa.gov/topics/earth/features/warmingpoles.html) *above pre-industrial levels, well above the* [*1.5 degrees Celsius*](https://www.ipcc.ch/sr15/) *hoped for by the IPCC.* (7) *These results were impactful because they provide an additional piece of evidence that the planet is warming.*

**4. Rehearse your answers and keep them between 60–75 seconds long to allow for follow-up questions**

General interviews in industry shouldn’t last longer than 30 minutes. If they do, the company is either really bad at interviewing or they aren’t getting the answers they’re looking for.

30 minutes may seem like a long time, but when you’re trying to get your responses across, it can feel like you’re racing against the clock.

Therefore, you must rehearse your answers and keep them between 60–75 seconds long. This will not only give you a prepared and polished look, but it will also leave time for follow-up questions if your interviewer is intrigued by your answer.

The key to this step in preparation is developing answers to questions that are jargon-free and easily understandable by anyone, no matter the industry or educational background. Your relevant research or education may be highly specific, which means that any responses you give to questions using that experience may only be understandable by people from that background.

For example, if you’re applying to a data science job in the automotive industry from an educational background in biomedical data science, your research may be relevant to use as an example but may be difficult to understand by a hiring team from a completely different industry. Not only that but it can be assumed that a technical recruitment team may also come from a variety of backgrounds and education despite all working in the same industry at this point in their careers.

Therefore, your answers should be jargon-free when explaining specifics about your relevant research or education and revolve around general data science terms that can be understood by anyone with that general background.

Example: *My research involved developing a machine learning model to analyze the effects of sun damage on the probability of a patient contracting skin cancer. This can be applied to the automotive industry because my research involved probabilistic testing that could be used in a variety of ways to determine cause-effect relationships in the manufacturing of vehicles.*

Short, sweet, and to the point, this example response has a lack of biomedical jargon that could be confusing and instead drills down into the essence of the research and how it’s relevant to the work the company is potentially hiring you to do. It’s also short enough that the recruiter could ask follow-up questions that would allow you to get more specific or expand your description of the work you did.

In my experience, it’s always been the follow-up questions you get after giving a response that gives you the chance to shine. Here is where you get to elaborate and show your genuine excitement about what you’re talking about. If you’re excited about your responses to questions, your recruiter will be excited about your responses to questions.

**5. Think of good questions to ask at the end of the interview that gives you more information about the data science role**

Many candidates forget that an interview is as much a chance for a company to get a sense of you as it is a chance for you to get a sense of them.

In academia, candidates may not be inclined to ensure that a position is a good fit for them due to extremely competitive conditions, low budgets, and limited positions. However, in industry, data scientists can have more flexibility in choosing a company that fits their beliefs, culture, and needs.

As part of your preparation for general interviews, it’s vital to prepare a list of 2–5 questions you can ask at the end of your interview that will give you a good sense of who you may end up working for in the future. These questions could range from whether or not they will allow you to work from home, what the policy is for presenting data analysis results to stakeholders, to whether or not your team will be expected to write production-ready code due to a lack of software engineering department. Questions like these are great ways to gather insight into the work culture, expectations, and business capacity.

For example, finding out that a company doesn’t have a software engineering department that can amalgamate all your data science code into existing processes may be a red flag to you that a company is either very small or very cheap. This may be an issue for you if you’re looking for a job where you can just focus on creating machine learning models without having to worry about integrating your code into existing processes. Or, it may be a good sign for you if you’re looking for a company where you can expand your skills and have more control over how your models are used and implemented.

The key is to design questions that will reveal details that are important to you, and that equally express your interest and desire to learn more about the company you’re applying for. Genuine interest in the job can be a key deciding factor between you and another candidate as industry companies are often looking for individuals who are actually going to be excited to come to work every day.

Here are some [questions](https://www.datascienceweekly.org/articles/what-questions-should-i-ask-when-trying-to-find-out-more-about-a-data-science-job) to get you started:

1. “What impacts is the company seeking from the data science team?”
2. “How much of the work is self-directed within the data science team versus directed by another part of the company?”
3. “What is the background of the data science team members I will be working with?”
4. “Is the data science team encouraged to develop new algorithms and models or is implementing established algorithms/models the main focus?”
5. “How much data engineering or software engineering is required as part of the role?”