**5 Simple Tips to Help You Future-Proof Yourself as a Data Scientist**

Technologies and standards may change, but these tips will be applicable throughout your entire career



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The biggest fear of anyone working in data science is becoming irrelevant.

Nothing moves faster than the speed of light and the tech industry, and it’s not uncommon for data scientists to become irrelevant only a few years after they break into the field.

This means that the fight is always on to remain relevant, learn new skills, and ensure you stake out your spot at the data science table on a regular basis.

However, it doesn’t have to be as scary as I’ve made it sound. As much as data science does move quickly with a constant need for new technologies, deepened business acumen, and sharper stakeholder presentations, there are a few simple things that will always remain the same. Technologies change all the time and there are always new advancements in research on how your industry could perform better.

Focusing on the things you can control, like soft skills, project management, business acumen, and asking good questions, will take you much further in the long run than picking up a new programming language or reinventing the wheel. Not only do these things make you a better data scientist (because let’s face it, data science, as much as we wish it would be, isn’t just mathematics and programming) but they will also future-proof your career for the long haul.

**The 5 simple tips you need to future-proof yourself as a data scientist**

**1. Develop good business acumen/become an SME**

If you can prove that you provide value to your company, you will never be out of a job.

But how do you provide proof of your impact?

By developing and maintaining good business acumen and keeping up with the latest trends and advances in your industry, you’ll ensure that you always have a spot at your company’s table.

What does good business acumen look like?

Solid [business acumen](https://www.chris-elgood.com/business-acumen-definition/) that will help future-proof yourself is the rich combination of knowledge and skill about a particular industry that has been informed by your experiences in the workplace. Business acumen is what helps inform your decisions, predict advances or changes in the industry, and gives you the confidence to steer your company (or even your department on a smaller scale) in a particular direction. This means keeping deeply informed about the minutia of the industry in which you find yourself. My favorite way to build up my business acumen and keep up to date on industry advances is to subscribe to newsletters, blogs, podcasts, and YouTube channels by industry leaders and enthusiasts.

One project I worked on was in a different field than I had ever worked with before. Prior to our first few meetings, I did some quick research so I could know what to expect and to see in which direction the industry seemed to be heading. After about ten minutes, I had a list of ideas that I then pitched to the client. While they didn’t take every suggestion I offered, they were certainly impressed that I had taken the time to do some research to understand them and how their business worked. Additionally, some of my suggestions made it into the final product and ended up providing more insight and detail than they were first expecting.

To take it one step further, you may consider becoming a subject matter expert (SME). SMEs are in high demand as they have a very specific bank of knowledge that applies to very specific situations that a client may be facing. For example, you could be a data scientist who is an SME in wildlife population ecology who uses this knowledge to help clients determine how the expansion of their industrial projects reduces habitat space and thereby affects species populations who call the area home. Alternatively, you could be a data scientist who’s an SME in website visitor retention who can pinpoint, using data, the exact moment when a client’s website loses its visitors and how that can be remedied. Becoming an SME is a great way for you to take non-data-science education (for example, degrees in science, medicine, engineering, business, etc.) and apply it to the work you do. You can also become an SME by auditing university courses for free, reading as much as you can on the subject, and also solidifying your authority as an SME by publishing work online.

**2. Be able to adjust your message to the audience**

This seems like a standard tip but people with technical backgrounds rarely know how to communicate effectively with the audience in front of them. It can be a hard thing to remember that you’re not always talking to a mirror of yourself.

The best way to begin delivering the right message to your audience is to check who your audience is and what’s important to them. From there you can begin crafting your message to suit the audience’s needs.

The message creation process is simple.

Don’t use technical terms when talking to non-technical people.

Fast-track the conversation to the technical stuff when talking to fellow data scientists.

The more senior the person you’re talking to, the more to the point your message has to be.

Small talk with long-term clients is always essential to maintain a strong relationship.

The CEO only wants to know the result of your analysis and what it means for their company.

Knowing how to talk to everyone has given me the most success in my career. My flexible communication skills ended up driving my career in tech in a particular direction that was less technology-based and more managerial-based because I was able to talk shop with my team members, I was able to explain technical concepts in non-technical ways to clients, and I was able to weed out the right information to deliver when talking to potential clients.

The ability to communicate effectively, efficiently, and intuitively with everyone from your team members to other techies, to C-level executives, and to long-term clients is a skill that will make you invaluable to your company.

**3. The ability to ask good questions will outweigh the need to keep up with the latest technologies**

Since the dawn of data science, it can be argued that most analyses could have been completed using Excel and SQL.

Data analysis is all about who can ask the right questions, not who can use the latest technologies the best. New data science technologies arise simply as solutions to minor problems or inconveniences that all data scientists have during their daily work. Maybe a new tool shaves a few minutes off your workload by automating a simple task, or perhaps a tool allows you to create visually stunning graphics that could be the envy of artists.

However, a new super-efficient tool cannot overcome the necessity of being able to ask good questions. Nor will these super-efficient tools make you a better data scientist if you can’t ask the right questions.

Developing the ability to ask the right questions at the right time will do more to future-proof yourself as a data scientist than your ability to keep up with new technologies that will become obscure one year later.

As mentioned above, most data analyses can be completed using simple tools. It’s the questions you ask of your client, boss, or other stakeholders that will make the difference.

The [questions you should be looking to ask with every analysis](https://towardsdatascience.com/how-to-ask-questions-data-science-can-solve-e073d6a06236) for the rest of your career include (but are certainly not limited to):

* “What variables are relevant to the problem I’m trying to solve?”
* “What are the key components of this data set?”
* “Can this data be categorized?”
* “Is this analysis result out of the ordinary?”
* “What are the key relationships?”
* “Is this the best way this company could be carrying out this task?”
* “What will happen under new conditions?”
* “What factors are best used to determine or predict this eventuality?”

My favorite way to map out information derived from my questions is on a whiteboard. Before, during, and after an analysis, I add general and specific questions to the whiteboard as they come to mind. Even simple questions, such as “Why are the results of this analysis important to the organization?” or “Who are the stakeholders of this analysis?” are added to round out a clear picture of the problem I’m trying to solve. Then, as I gather my answers, I write them on sticky notes and add them to the board under the question they answer. Using sticky notes for answers allows me to make connections between different pieces of information derived from the questions and also gives me a modicum of flexibility when my answers to questions change based on different analysis results. As a bonus, these sticky notes then become the key pieces of information I use to help me communicate my results, as discussed above.

**4. A good attitude and a genuine curiosity about the problems that you’re solving will keep you around**

People in tech have the reputation of being grumpy, sleep-deprived jerks who want to do the bare minimum work for people who they deem to be less intelligent than them.

I’ve seen this to often be a fair representation of a decent cross-section of the tech population. I’ve seen several individuals who, despite being incredibly talented and who are looking to work in a deeply sequestered data science role where little contact is had with the outside world, have still not managed to get the job because of the bad energy they bring with them into the office. Unfortunately, the people who choose to come across this way tend to fizzle in their careers as bad attitudes and work that’s only just above par turns off team members, bosses, and company stakeholders.

Everyone likes coming to work when their team is comprised of happy, genuinely curious individuals. No one likes working with someone who is obviously just there to get paid — and keeps reminding everyone else of that fact.

On the flip side, a good attitude and a genuine curiosity about the problems that you’re solving are great attributes when working closely with clients. Remember: the client is always king. This means that ensuring that they’re happy and taken care of is your top priority. This is especially vital when working for a small company where you may not have a client care team who is the primary interface with the client. In a small company, you may not only be just a data scientist — you may also be a client’s main point of contact. Remembering to maintain a professional, patient, and curious air will let clients know that you genuinely care and that their data is in good hands.

Having a good attitude has taken me a long way in my experiences. No matter how bad the day was or how wrong my code was running, I would always turn it on for clients and exude an air of energy and curiosity that meant I was always a pleasure to engage with. This is where you can combine a good attitude with solid business acumen to ensure that every conversation you have with other members of your team, executives, or clients is fruitful and bears new ideas that may have not been considered before.

The data science industry is no exception — a good attitude will carry you a long way in your career, both as you work within a team and as you interface with a client.

**5. Develop project management skills that can see a project through from start to finish**

What sets apart junior data scientists from the rest is the ability to manage a project from start to finish.

Advancement in data science tends to be based on project and people management skills. This is critical if you want to future-proof your career and enjoy a steady climb up the ranks of your company.

As a junior data scientist, it’s understandable that your first goals in your career are to merely survive a project and turn in your deliverables on time. However, as you advance in your career, you’ll realize that those with project management skills are far more likely to advance than those who remain content with doing just their one small part of the project.

Not only does developing project management skills allow you to advance within your company, but they also provide you with the ability to strike out on your own and become a consultant if you suddenly feel like working for yourself.

Managing a data science project from start to end involves all of the traditional phases of a data science project (including problem definition, data collection and cleaning, analysis, visualization, and implementation) but also the preliminary information-gathering sessions with a client and the final presentation of findings to stakeholders at the end of the project. All online data science courses teach you how to do the traditional phases of a data science project, but few move beyond and describe how you should carry out the preliminary and final stages of a project.

The preliminary and final stages of a project where you’re interfacing with the client involve using tips 1–4 as described above. Managing an entire data science project will require all of the technical and mathematical knowledge you develop as you first become a data scientist, but also draw on business acumen, communication skills, fact-finding and organization skills, as well as proper comportment and professional skills.

Solid project management skills are what ended up guiding my career in tech. While I was decent on the technological side of things, could do the math, and could write the code, I excelled at managing projects. Instead of fighting it, I decided to leave the more technical part of the job and focus on being that strong leader who could get a project done well and on time. While it can be scary to move away from what you know well, it can be a great learning experience that will teach you more than if you played it safe, and will also provide an avenue for your advancement in the future.

**Bonus: SQL, domain knowledge, and soft skills are the only things that will never change**

The three things that will never change in data science are the need for SQL, domain knowledge (business acumen), and soft skills. The rest will change at least once a year, but the three constants you can rely on are those listed above.

Instead of getting wrapped up in technologies that seem to change every five minutes, it’s more important to solidify the skills that will never change. As I’ve said before, most data science projects can be completed using SQL, Excel, business acumen, good communication skills, and a little intuitive thinking. There’s a lot of belief in the data science field that those who only use simple technologies are lesser data scientists. Conversely, I believe that those who can use simple technologies to solve the same problems as those who use the latest and greatest tools are better data scientists because they don’t have all the fancy gimmicks to complete their projects.

Every company will indeed have its standard ways of doing things and specific criteria that they’ll use to decide which of their data scientists advance. While competency with new technologies may be one of them, there will be far more criteria requiring that the data scientist have solid business acumen, can communicate effectively with a variety of audiences, can ask the right questions to solve a problem, has a good attitude and a genuine care and curiosity for the projects they complete, and the ability to manage projects from start to finish — in other words, all of the things in data science that will never change.

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