Opportunities and Learning Paths

Career Opportunities in Data Analysis

Viewpoints: Get into Data Profession

- Data analyst job openings exist across industry, government and academia. Every industry, be it banking and finance, insurance, healthcare, retail or information technology has space for skilled data analysts. These roles are a sought after in large businesses as they are in startup San new ventures. According to Forbes, the global big data analytics market that stood at 37.34 billion US dollars in 2018 is expected to grow at a compound annual growth rate of 12.3% from 2019 to 2027 to reach 105.08 billion US dollars by the year 2027. Currently, the demand for skilled data analysts far outweighs the supply, which means companies are willing to pay a premium to hire skilled data analysts.
- There's a wide variety of job roles available for data analysts to understand. The career path is open to you, we will broadly classify the rolls into data analyst, specialist roles and domain specialist roles. Data analyst specialist roles are for data analysts who want to stay focused and grow in the technical and functional aspects of their role. On this path. You could be starting your career as an associate or junior data analyst and work your way up through analyst, senior analyst, lead analyst and principle analyst roles. The boundaries between these roles, the years of experience that qualify you for the next level and the nature of experience you need to gain to move up could vary depending on the industry, the size of the organization, and how big your team is. In smaller teams, for example, you could be gaining experience in all facets of data analysis from gathering data all the way through to visualizing and presenting your findings to stakeholders, and this may happen within a short span of time in larger teams and organizations, roles may typically be bifurcate it based on activity, which means you could be gaining experience in one specific phase of the process before you move to the next. This helps you hone your skills in one part of the process before you move to the next. On your journey from an associate data analyst to a lead or principle data analyst, you will be continually advancing your technical, statistical and analytical skills from a foundational level to an expert level. You will be demonstrating your ability to work with a wide ranging set of tools and platforms. Different aspects of the data analysis process and a wide variety of use cases in terms of technical

skills, you may start off knowing just one querying tool and programming language. Anyone type of data repository or a limited set of visualization tools. As you gather more experience, you're expected to learn and demonstrate your ability to work with more and more tools, languages, data, repository's and newer technologies, your communication skills, presentation skills, stakeholder management skills and project management skills all need to be honed and taken up A notch progressively. As a lead or principle analyst, you may also be responsible for establishing processes in your team, making recommendations for software and tools. The team should work on upskilling the team and expanding the team to include more profiles. In some organizations, these responsibilities could be aligned with the manager level person who has risen through the ranks to manage a team of data analysts.

- Domain specialists, also known as functional analysts, are analysts who require specialization in a specific domain and are seen as an authority in their domain such as our healthcare, sales, finance, social media or digital marketing. They may not be the most technically skilled people. These roles carry titles such as our analyst, marketing analyst, sales analyst, Healthcare analyst or social media analyst.
- And then there are the analytics enabled job roles. These include roles such as project managers, marketing managers and HR managers. These are jobs where analytics skills lead to greater efficiency and effectiveness. Affair amount of the data analyst job openings are analytics enabled. As more and more organizations rely on data for decision making.
- As a data analyst you also have options for exploring and learning new skills to gain entry into other data professions such as data engineering or data science. For example, if you're starting off as a junior data analyst and really like working with data lakes and big data repository's, you can acquire further expertise in these technologies and evolve your career into becoming a big data engineer. If the business side of things excite you more, you could similarly explore the skills required for making. A lateral move into business analytics or business intelligence Analytics.
- While the data analyst career landscape is very vast, the good thing is that you have a plethora of resources available to help you grow to be successful in your journey as a data analyst, all you need to do is grab the opportunities you want to pursue, or the ones that present themselves to you and learn along the way.

Viewpoints: What do Employers look for in a Data Analyst?

- In this video, we will listen to data professionals talk about what employers look for in a Data Analyst. Employers look for Data Analysts with integrity. During the hiring process, I will ask, if you had to choose just one, would you rather meet a deadline or get a right answer? I'm always looking for someone who would say, I want to make sure that the information is right. Missing a deadline isn't as detrimental as a company making a multi-million dollar decision on wrong information, or someone losing their job because it wasn't pulled or it wasn't reported correctly. It's much more important to have integrity. I think the number one thing employers look for in Data Analysts is someone who can communicate clearly. If you do the most brilliant analysis in the world, but you can't communicate it to external stakeholders, then it's really not worth anything. I think that skill is really sought after. I think another thing that companies obviously look for when they look for a Data Analyst is fluency with numbers, ability to understand complex analysis, ability to understand AB tests and what the results of AB tests are saying, and the implication of those results. I also think, increasingly, employers are looking for Data Analysts with really strong SQL skills. Another thing employers are looking for in Data Analysts is a growth mindset and willingness to learn, because the industry is changing at a really fast pace. I think they are looking for the programming skills, including Python, R, SQL. At the same time, they're looking for some personalities. Whether you are detail-oriented, whether you like working with data, and whether you are a problem solver, so on and so forth. As an employer, I hire people all the time. What am I looking for? We're looking for people who are detail-oriented and who are somewhat overachievers. They don't just want to do what's in front of them, they want to go further. We're looking for people who have higher aspirations, and who also are able to think outside the box. If I say, do ABC, they're not just going to do that, they're going to do it plus [inaudible] and give me some alternatives. People who are able to trouble-shoot. If something goes wrong, they're not just going to stop and say, my goodness, I need to go talk to my supervisor. They're going to say, here's a problem, here's my thoughts. Here are two possible solutions on how you can resolve this so that the job and the company can keep moving forward. That's what you want. Not just detail-oriented and not just good with numbers. You also have to be someone who can think outside the box, and be able to problem solve, and

trouble-shoot. That's what employers are going to be looking for now more than ever. They look for the ability to know data, and by know data we mean several things. Be comfortable with it in various formats, be able to think about it. By that we mean, know what data you want to solve the problems that are at hand. Knowing the data skill is very important. Problem-solving is another very key skill. Meaning, if there is a problem presented to a Data Analyst, they should be able to know how to tackle that problem using data in whatever format it may be sitting in, and being able to analyze it and present the insights that will then solve the problem. They also need to be very dynamic in that, if they are presented with a very different data set suddenly, which looks nothing like it did before, they need to be able to adapt to that change. That's why the quality of being dynamic and adaptable is also important. They also need to be able to pick up technical skills quickly. By that we mean, if there is one SQL DIAdem being used in one setting, they need to be able to operate under a different paradigm. If there is a place that's using RStudio, but they know Python, they need to be able to pick up RStudio quickly, and that thing. Being able to learn fast, being dynamic, and knowing data, those are the few things that employers do look for in a good Data Analyst.

The Many Paths to Data Analysis

- There are various paths you can take for gaining entry into the data analyst field. While some employers may ask for an academic degree as a pre-requisite, even if you don’t have a degree, you still have several options available to you that can help you gain an entry, or even make a lateral move, into the field of data analysis. Let’s start with the most obvious path. An academic degree in Data Analytics, Statistics, Computer Science, Management Information Systems, or Information Technology Management can start you off with a strong advantage. You could alternately enroll in online training programs that can equip you with the required knowledge. Comprehensive online programs for data analysis are multi-course specializations offered by learning platforms such as Coursera, edX, and Udacity. These courses are designed and delivered by some of the world’s best domain experts. Since you have a fair idea, by now, of the technical, functional, and soft skills you need in order to be a data analyst, choosing the right learning path should be fairly straightforward. As you gather more work experience, you can keep advancing your

knowledge and skills in specific areas, for example, Statistics, Spreadsheets, SQL, Python, Data Visualization, Problem-Solving, Storytelling, or making impactful presentations. These courses also give you hands-on assignments and projects which give you a feel for the real-world application of your knowledge and skills. You can even add these projects to your portfolio. So, if you don't have an academic qualification, these courses can help you gain opportunities at an entry-level and work your way up as your experience grows. Now let's look at a scenario where you have a couple of years of experience in a different line of work and want to make a switch into the data analysis field. There's a very good chance that you can do that successfully if you plan well. Since data analysis is a vast field, it would be useful for you to first research the knowledge and skills you need, the various job opportunities that are available, and the growth opportunities available on the path you may be considering. You can tap into online resources, forums, and your network of friends and colleagues to connect with people in this field and gain insights into real-world scenarios. If you're currently working in a non-technical role, you may consider exploring the Domain Specialist, or Functional Analyst path. If you're in Sales, you could consider starting your journey by positioning and skilling yourself for a Sales Analyst position. You begin with the advantage of industry experience and skill yourself in other areas such as Statistics and programming, for example. If you're currently working in a technical role, you have the ability to quickly pick up the tools and software you need for the data analyst role. You're also probably stepping in with the advantage of having a good understanding of the domain or industry you're from. For some of the other skills, such as problem-solving, project management, communication, and storytelling—you may already be using these in some capacity in your existing job. You can always enhance these skills through trainings, online courses, communities of practice, and forums. Data Analysis is a fast-moving field. If you're curious, open to learning new things, and excited about the field, you will be able to forge a path forward, regardless of the formal qualifications you think you may be missing.

Viewpoints: Career Options for Data Professionals

- In this video, we will listen to practicing data professionals talk about the various career options available in this field. The whole data related profession today has also become

very colorful, very dynamic, evolving all the time, and it also presents a lot of range of options to anyone who wants to enter the field of being a data professional. It ranges from, if you were to think of various circles as options, starting with a Data Analyst. From there you can upscale a lot more become a data scientist. You can also become a statistician, which is what I was when I first started off. You can then further specialize yourself in a specific direction of data in order to become a data engineer. Or you can start by being a BI analyst or a specialist and then don't go to become a data engineer. In other words, either you can do a track of Data Analysts and data scientists, or you can do a track of a BI analyst and a data engineer. Those are parallel tracks within the data profession. You can then also go to the other extreme where you can become a Machine Learning Engineer, an AI Engineer and so on. There are many such roles that anyone interested in the field of data can really take on. A few of the most common career options available to Data Analyst is to get deeper into the weeds with Machine Learning and Engineering, and become a Data Scientist or a Machine Learning Engineer that focus more on Machine Learning modeling. Other career option available to Data Analyst is to dive deeper into the business they're in and to inform top-level company strategy. I think that role is really important and interesting and has really evolved in recent years. Another path for a data analyst is to start to become a people manager and manage other Data Analysts and work to triage what gets worked on. Because there's always going to be more questions in the organization that can be answered with data than there are people to answer them. A Data Manager role can be really interesting and critical in terms of making sure the most important pieces of work actually do get worked on. You can be a Bookkeeper. You can be an Accountant. You could be a CPA. You can be a Stockbroker or a Financial Analyst for the government or a lot of large companies. You could be a Real Estate Broker. Lots of people are great Data Analysts, but to do that you do have to really like numbers and you have to be really detail oriented. If that's not you and numbers don't jump off the page at you, Data Analyst might not be the right thing for you.

Viewpoints: Advice for aspiring Data Analyst

- In this video, we will listen to data professionals giving advice to aspiring data analysts. One piece of advice I'd give to aspiring data analyst is keep learning and don't get

discouraged. There is more that's been written about analytics than you could ever learn in a lifetime. Don't try to learn everything at once but take your time and make sure every week, every month, every year you are constantly learning something new. I think that'll serve you well. One piece of advice I've been given in my career that I found to be really helpful is to consider your career like an uppercase T, and you should have broad knowledge. The top of the T represents that you should have broad knowledge in a number of different areas. Although it doesn't have to be deep, you should know a little bit, at least about A/B testing, about machine learning, about data visualization, about SQL, about Python, about R. Then the bottom part of the T is you should go really deep on at least one area. There should be one area among the ones I just mentioned, where you have a really deep rigorous understanding of it. It is, use every job that you have to your advantage meaning something can be found from everything. Whether it is looking at your parents budget or asking your parents if you can see the checkbooks or if you work at a fast food restaurant, looking at the numbers. How many people are coming in? How many dollars are being turned over? Talk to the manager about what's next, what the numbers actually mean. When you're talking to potential employers, have your examples ready. It doesn't have to necessarily be just word experienced but your life experience, how have analytics, how have you used analytics even in your personal life. If you can tell me and talk to me about what you've done, personally or professionally, and how it relates to what we're doing. That will take you a very long way. Piece of advice I'd give to aspiring data scientists is to build out a professional portfolio that showcases your data science or data analytics skills. You can do this by looking up fun data sets online and analyzing those data sets. You can also do that within your job. Even if your current job isn't to be a data analyst, look for opportunities where you can crunch numbers, and then that'll just naturally lead you to a nice portfolio or nice wins in terms of data analyst projects. My advice to an aspiring data analyst is to follow your passion. Find a job that meet your needs and gives you joy doing it. There's nothing worse than waking up every morning and hating to go to your place of employment. There are so many data analyst jobs in various industries, departments. There's just so many options that there's no need to take a job, just to have a job. Find something that really fuels your passion and gives you something to get up every morning for.

Viewpoints: Women in Data Professions

- In this video, we will listen to women share their experience of being a data professional, and their advice to women aspiring to enter this field. As a woman in Data Science, I still run up against the stereotype that this is a man's job. I've walked into meetings and had people looked disappointed or confused. I take that as an opportunity to prove them wrong. This isn't a job just for men, it's for a person who has the insight, the ability, and the drive to get the job done. As long as you possess those skills, then there's no reason why anyone can't do anything that they put their mind to. Whether you're male or female, whether you are white or black, you have the opportunity to prove people wrong by the work that you produce. I would say it can be tough, but you have to find your voice and don't be afraid to use it. A lot of times, as women, were not able to find our voice or speak up, or we're afraid of how people will want to treat us if we speak up. But it's more important that you be heard and seen, not just being loud or wrong, but if you have the data to back it up, if you have good content and things you want to say, don't be afraid to raise your hand and let people know that you are a thinker and a you can get this done, because that's going to be important as you progress. The only real way to get ahead is drive, and people don't know you have drive if you're too quiet. If you're just quietly working away in a corner, a lot of times people can't see it. Speak up, make sure your voices may heard, make sure you are being seen as a woman who knows how to grow and how to help in the Data Science field. When I started, it was mostly men in my class, especially back in grad school. But now, I'm seeing that data teams, both data science and data engineering teams, are filled with a lot of women as well. I would advise women do continue upskilling.
- If they are fond and if they like a career filled with programming, data and problem-solving, then they should continue building their technical skill set, so that they can represent themselves in the landscape of a data professional as strongly as possible? Don't allow your gender to be a crutch. Still go hard, put in the work and show the world your amazing talents. There are no roles that are set aside for specific genders. If you're fortunate enough to work in a profession that you thoroughly enjoy, then go for it.

Summary

- In this lesson, you have learned the following information:

- Data Analyst roles are sought after in every industry, be it Banking and Finance, Insurance, Healthcare, Retail, or Information Technology.
- Currently, the demand for skilled data analysts far outweighs the supply, which means companies are willing to pay a premium to hire skilled data analysts.
- Data Analyst job roles can be broadly classified as follows:
- Data Analyst Specialist roles - On this path, you start as a Junior Data Analyst and move up to the level of a Principal Analyst by continually advancing your technical, statistical, and analytical skills from a foundational level to an expert level.
- Domain Specialist roles - These roles are for you if you have acquired specialization in a specific domain and want to work your way up to be seen as an authority in your domain.
- Analytics-enabled job roles - These roles include jobs where having analytic skills can up-level your performance and differentiate you from your peers.
- Other Data Professions - There are several other roles in a modern data ecosystem, such as Data Engineer, Big Data Engineer, Data Scientist, Business Analyst, or Business Intelligence Analyst. If you upskill yourself based on the required skills, you can transition into these roles.
- There are several paths you can consider in order to gain entry into the Data Analyst field. These include:
- An academic degree in Data Analytics or disciplines such as Statistics and Computer Science.
- Online multi-course specializations offered by learning platforms such as Coursera, edX, and Udacity.
- Mid-career transition into Data Analysis by upskilling yourself. If you have a technical background, for example, you can focus on developing the technical skills specific to Data Analysis. If you do not have a technical background, you can plan to skill your self in some basic technologies and then work your way up from an entry-level position.