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Crafting a Data Science Portfolio That Will Actually Get You An Interview This 2024

Advice for up-and-coming Data Scientists

Andres Vourakis · [Follow](#)Published in [Level Up Coding](#)

8 min read · Feb 27, 2024

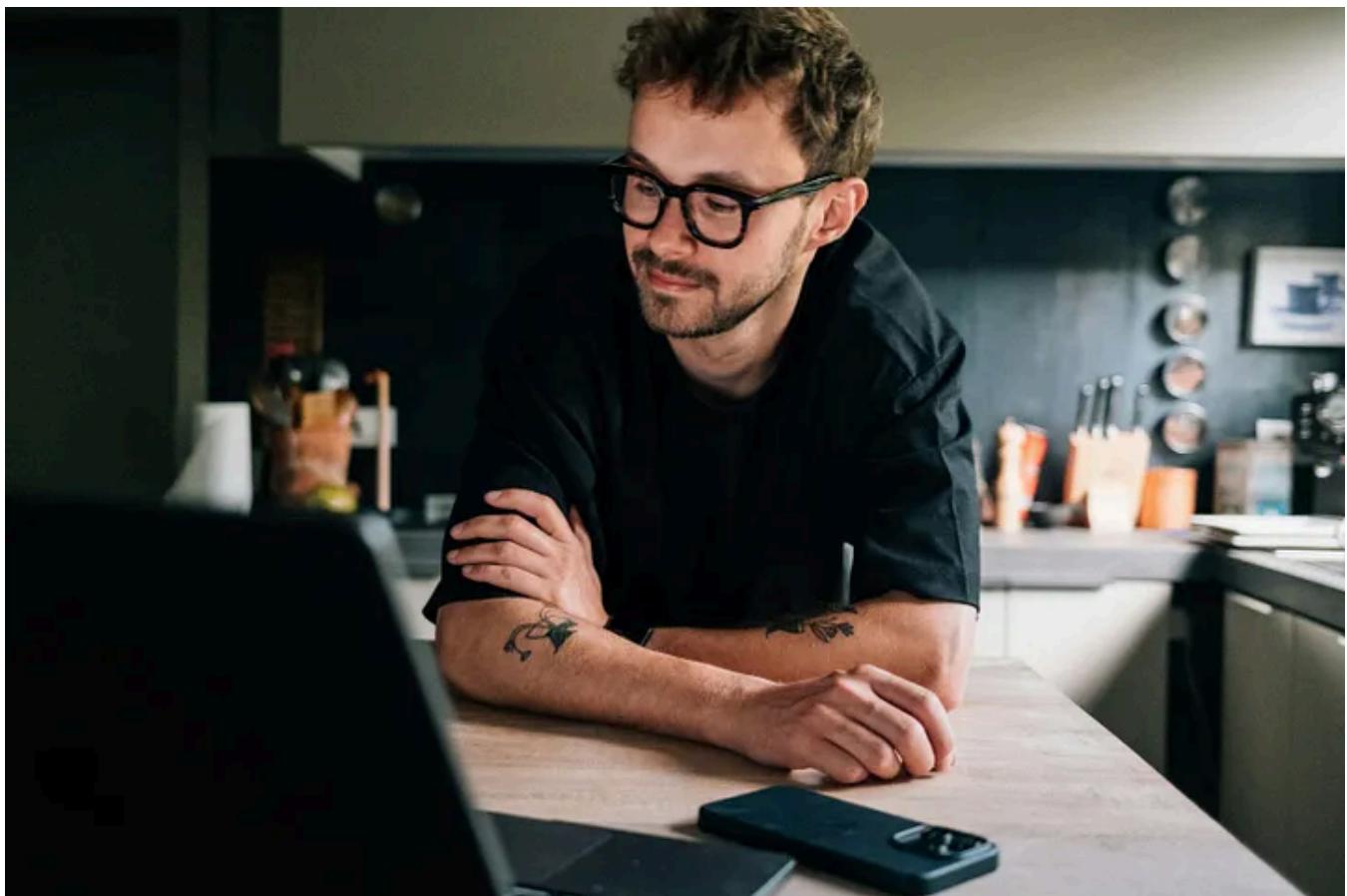
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If you have been paying any attention to the recent developments in the tech industry, you might've noticed two things:

Layoffs in Tech will continue

The massive wave of tech layoffs we've been facing since last year doesn't show any signs of slowing down. According to Mark Zuckerberg, CEO of Meta:

Companies are realizing that, while painful, there are benefits to being 'leaner'.

A career in Data Science continues to rise in popularity

Nevertheless, the landscape is still looking very promising:

The U.S. Bureau of Labor Statistics projects a robust 35% employment growth for data scientists from 2022 to 2032

What does this all mean for up-and-coming Data Scientists:

1. Companies are hiring more carefully
2. Competition will be fierce

Sadly, your lack of work experience as an up-and-coming Data Scientist puts you in a very tough spot, which requires you to be even more strategic if you wish to stand out from the competition.

I was an ex-hiring manager, who led a Data Science team at a mid-size tech company, and I can tell you with confidence that your chances of getting an interview increase tremendously if you can effectively showcase your practical experience through a strong Data Science portfolio.

So today I'm going tell you everything you need to accomplish just that.

Here is the agenda for today

- What makes up a competitive Data Science portfolio?
- How do you effectively showcase your portfolio?
- Bonus tip: Reaching the top 1%

What makes up a competitive Data Science portfolio?

A competitive Data Science portfolio should demonstrate competence in a wide range of relevant areas such as data visualization, advanced data modeling, etc... After all, Data Science is a broad field.

But most importantly, it should stand as a testament to your passion for working with data.

There are 4 areas you must cover in your portfolio if you wish to gain a competitive advantage during your job search:

1 — Data Visualization

A big part of the job of a Data Scientist is to act as a champion for data democratization and this goes beyond just creating pretty visualizations.

Your work must showcase your ability to do two things:

1. **Enable data exploration:** Anyone, from your Data Scientist peers to your marketing stakeholders, should be able to use your visualizations to extract insights and identify areas that require further investigation.
2. **Communicate findings effectively:** Through the use of the *appropriate* data visualizations, you should be able to clearly communicate your findings. Note the emphasis on the word “appropriate”, that’s the part you need to get good at.

There is no better way to show potential employers that you are ready to integrate within their Analytic teams than to show your ability to work with BI tools.

I know, there are lots of BI tools out there: Tableau, Looker, Power BI, etc..

My advice is that you familiarize yourself with a few of them, pick one, perhaps the one that the company you are interested in uses, and start building dashboards.

My two cents: I recommend you sign up for a public Tableau account and start building dashboards which you can then have as part of your portfolio.

2 — Exploratory Data Analysis (EDA)

This is a fundamental skill of any good Data Scientist. By including standalone EDA projects in your portfolio, you showcase your proficiency in converting a complex dataset into a comprehensible story, a skill highly valued in any industry.

As a Data Scientist, you'll be doing EDA so much and so often that it will become second nature, so you must demonstrate proficiency in this skill.

My two cents: Find yourself a dataset you are interested in exploring, [Kaggle.com](#) is a good place for this, and start analyzing it and documenting your work within a Jupyter Notebook. Here is one I did a couple of years ago for which I wrote a [Medium article](#).

3 — Data Collection

Almost no one talks about this area as we are constantly sold this fairy tale idea that all Data Scientists do is build predictive data models or advance analysis, but this couldn't be far from the truth.

As a Data Scientist, you need to possess a wide range of skills, and having some sort of experience with the intricacies of data collection is a must.

This can come in many shapes and forms: Making API calls, collecting data through experimentation, web scraping, etc...

My two cents: One good idea is to find a website that has some interesting data you wish to analyze and start web scraping it. If you need some inspiration, here is a similar project I did a few years ago for which I wrote a [Medium article](#). This will not only showcase your skills with Python, but web scraping is still a very relevant and sought after skill in 2024.

Data Science Hire Ready - Online Course

Gain a competitive advantage during your job search and land a data job quickly.

course.andresvourakis.com

4 — Advance Data Modeling

This is the one you are probably most familiar with, and for a good reason, it's the one skill that makes Data Scientists so valuable.

This goes beyond simple EDA. In fact, most advanced analytic projects start with EDA to help you get a basic understanding of the type of data you are working with and then you move on to apply some kind of statistical or machine learning model in order to extract deeper insights or make predictions.

This is the one where you demonstrate that you are not only capable of collecting data, making great visualizations, or doing EDA in your sleep but that you can take all of those skills and bring them together to answer difficult questions that provide deeper value.

My two cents: Once again, Kaggle.com is a good resource for inspiration and finding datasets, but honestly this is where you get to be bold and creative. You probably want to do your technical work on a Jupyter Notebook or Google Collab, but it would also go a long way if you paired it with a high-level technical write-up.

How do you effectively showcase your portfolio?

The most important thing you should understand is that all of the work you put into doing the projects I recommended above means nothing to a recruiter or potential employer unless they are showcased properly.

The number one mistake I see

Believe it or not, the analysis is only half of the work, communicating it effectively is the other half.

Don't make this common mistake I've seen many applicants do which automatically puts them in the "rejects" pile.

Don't publish Data Science projects without a document summarising your findings and explaining your methodology. Or, unstructured JupyterNotebooks without a proper title, headlines, and descriptions for each section of your analysis.

Not only does it show a lack of organizational skills, which is a big "no" for any Data Scientist, but also guarantees that your recruiter will skip your application since it can't adequately evaluate your work.

1 — Hosting your portfolio

You need a one-stop for showcasing all of your work. A place where a recruiter or hiring manager can go and browse through your projects at a glance and in detail.

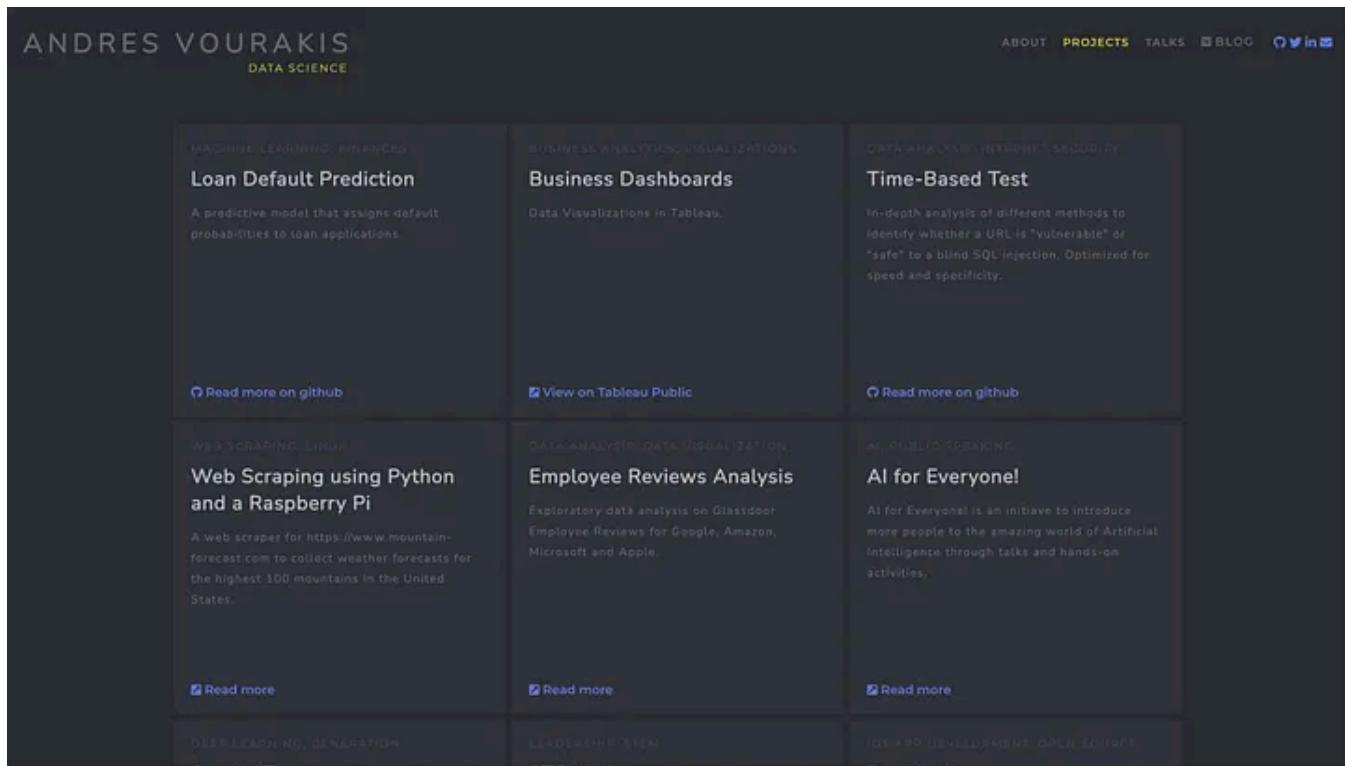
These are some of the best options you have:

1. GitHub README.md: This is probably the simplest and most basic option, but I've seen many people do a very nice job at presenting their work.

The screenshot shows a GitHub profile for `hemansnation`. The profile picture is a circular photo of a smiling man with dark hair and a beard, wearing a grey t-shirt. The GitHub interface includes a navigation bar with links for Overview, Repositories (64), Projects, Packages, and Stars (1). Below the profile picture, the GitHub handle `hemansnation` is displayed, along with the name **Himanshu Ramchandani**. A bio section states: "I help startups utilize big data to build AI-powered products and mentor professionals to improve their skills in the data field by 1% every day." A "PROFILE VIEWS" counter shows 17,511 views. A "FOLLOW @HEMANSNATION" button indicates 1.2K followers. The "Socials" section lists links to `@HemansAI` on LinkedIn, `India`, `https://www.himanshuramchandani.co/`, and `@hemansnation` on Twitter. The "Achievements" section shows two gold medals and one blue medal, with a "Send feedback" button. The "Organizations" section lists four organization icons. The main content area displays the `README.md` file, which starts with "Hi 🤖 I'm a Data & Engineering Consultant" and describes the author's experience in Software Development and Data Science, mentioning 6+ years of experience in Analysis, Design, Development, and Testing of various applications in JavaScript and Python environments, expertise in Functional and Object-Oriented Programming styles of Python and JavaScript, UI UX design using Adobe Photoshop and Illustrator, and knowledge of Service Oriented Architecture (SOA). It also notes work for industry clients in healthcare, artificial intelligence, finance, and education sectors. The "Skills" section is represented by a row of colored icons for various technologies.

Himanshu Ramchandani GitHub README.md resume and portfolio. Image by Author.

2. Personal Website: This is what I used myself when I got started. I hosted my website using Github Pages since it is free, and then paid for a domain name to make it easier to link and look more professional.



My old portfolio as a recent graduate. Hosted on my personal website. Image by Author.

3. Portfolio Hosting Service: datascienceportfolio.io seems like a great free option although I haven't tried it out myself yet.

The screenshot shows a user profile for Alexander Marks, a Data Analyst at Amazon based in London, UK. His profile picture is a circular photo of him smiling. Below his name, there are social media links for LinkedIn, GitHub, and email.

Projects

- AirBnB listings price prediction**: Python, SQL, Matlab. Description: Prediction of AirBnB prices growth Milan (Italy) to provide insights on the areas that might soon get more opportunities to monetise with short stays. The algorithm takes into account seasonality, home characteristics, economic factors and stats on existing properties. [Read more →](#)
- Spotify visual data art**: Python, Javascript, SQL. Description: Inspired by Windows Music Player animations, this algorithm creates cool animations for every music track on earth. The animations are tailored to the melody as well as the text, with the aim to create engaging experiences for users. [Read more →](#)

About

Quantitative economics graduate, enjoy working with business stakeholders to help support strategy based on quantitative insights and statistical models.

Skills

SQL, Python, R, Tableau, Excel, Statistical modelling, Sampling techniques.

Experience

Mar 2022 - now
Data Analyst at Amazon
Leading the development and implementation of data analytics strategies that support business goals. Managing a team of data analysts to ensure data accuracy, completeness, and integrity. Providing insights and recommendations to senior management based on analysis of customer behaviour, product performance, and other key metrics.

Education

2022
Quantitative Economics, Master of Science, University of London
High quality quantitative training in economics, a focus on advanced research methods and a supervised research thesis. Rigorous grounding in using mathematical and statistical methods to derive, test and apply formal economic models.

Sample portfolio image from datascienceportfolio.io

Regardless of which option you pick to showcase your work, you'll need a place to host your code, and your best option without a doubt is GitHub. In there, you'll host:

1. Jupyter Notebooks

2. Python/R projects

3. SQL projects

2— Setting a strong first impression

Now remember, your portfolio is most likely not the first thing a recruiter or hiring manager will see.

Whatever is included in your job application is the first thing they'll look at, which means you can not neglect this part. Ensure these two are ready to go:

1. Your LinkedIn profile: Take advantage of the projects section on your LinkedIn to list your projects, but also don't forget about the “Featured” section.

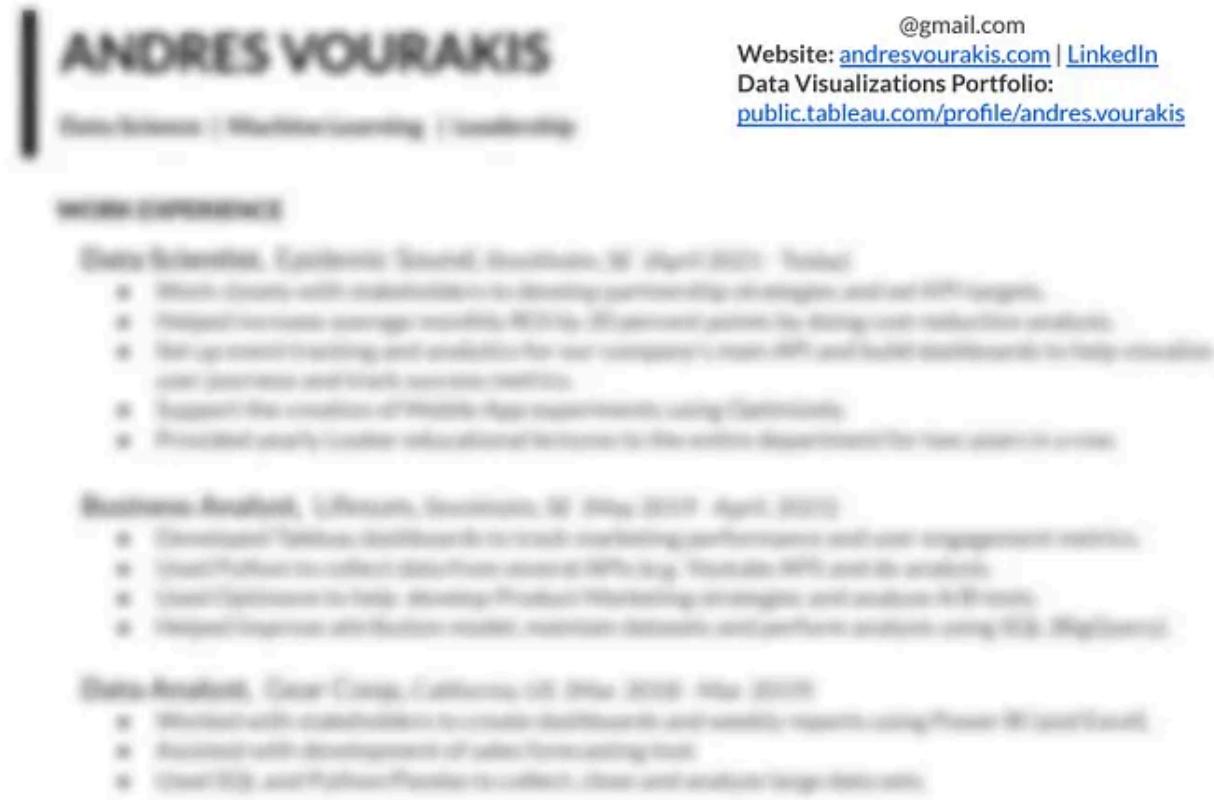
The screenshot shows the LinkedIn profile of a user named Andres Vourakis. At the top, there's a navigation bar with icons for Home, My Network, Jobs, Messaging, Notifications, and Me. Below the profile picture and name, it says "Creator mode On". There are sections for "My network" and "Show all 5 resources →". The main focus is the "Featured" section, which contains three cards:

- Link**: A photo of a landscape with a hand reaching out, titled "5 Lessons I Learned during My first job as a Business Analyst" from Medium.
- Link**: A colorful geometric graphic titled "Demystifying the P-Value for Data Scientists" from Medium.
- Link**: A screenshot of a mobile device displaying data analysis software, titled "How I use BigQuery Analytic Functions as a Data Scientist" from Medium.

Below the featured section is an "Activity" section with "1,531 followers" and a "Create a post" button. To the right, there are vertical columns for "People From yo" and "Recent activity".

The “Featured” section on my LinkedIn. Image by Author.

2. Your CV/Resume: Include a link to your most relevant projects for the job you are applying to, but also include a link to your entire portfolio.



TECHNICAL PROJECTS

Loan Default Prediction: A predictive model that assigns default probabilities to loan applications. Details: github.com/avourakis/Loan-Default-Prediction

AI for Everyone!: Lectures and workshops on Artificial Intelligence topics such as Machine Learning, TensorFlow and Artificial Neural Networks. Details: andresvourakis.com/ai-for-everyone

Including links to projects and portfolio in CV. Image by Author.

Bonus tip: Reaching the top 1%

I know, building even a “basic” Data Science portfolio can be a lot of work, but trust me, it will pay off tremendously.

Now, I don’t want to leave you without sharing a tip that has the power to elevate you to the top 1% of candidates.

As I mentioned before, a Data Science portfolio is all about telling a story. There is no better way to help you tell your story in a way that automatically makes you stand out from the competition than through having a personal brand on social media.

You have many ways to do so, LinkedIn, Twitter (X), etc..., but these two are probably the most powerful ones:

1. Starting a Data Science YouTube channel
2. Start writing Data Science blogs on Medium

Doing any of this has huge implications for your own career development:

- They will not only teach you to become an effective communicator. You will practice how to explain complex topics in a simple way, which is one of the most important soft skills of any good Data Scientist
- They have the potential to generate some extra income.
- Building a personal brand is one of the best ways to grow your network and has the potential to catch the eye of potential employers.

🚀 Also, you can join the waitlist for my upcoming online course Data Science Hire Ready created specifically for those who wish to gain a competitive advantage during their job search and land a data job quickly.

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Written by Andres Vourakis

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Data Scientist turned Solopreneur. Follow my journey to Financial Freedom. <https://linktr.ee/avourakis>

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```
*__, a, b, *__ = [1, 2, 3, 4, 5, 6]
print(__, __)
```

What does this print?

- A) Syntax error
- B) [1] [4, 5, 6]
- C) [1, 2] [5, 6]
- D) [1, 2, 3] [6]
- E) <generator object <genexpr> at 0x1003847c0>

 Liu Zuo Lin

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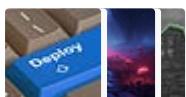
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 Hammad Hassan

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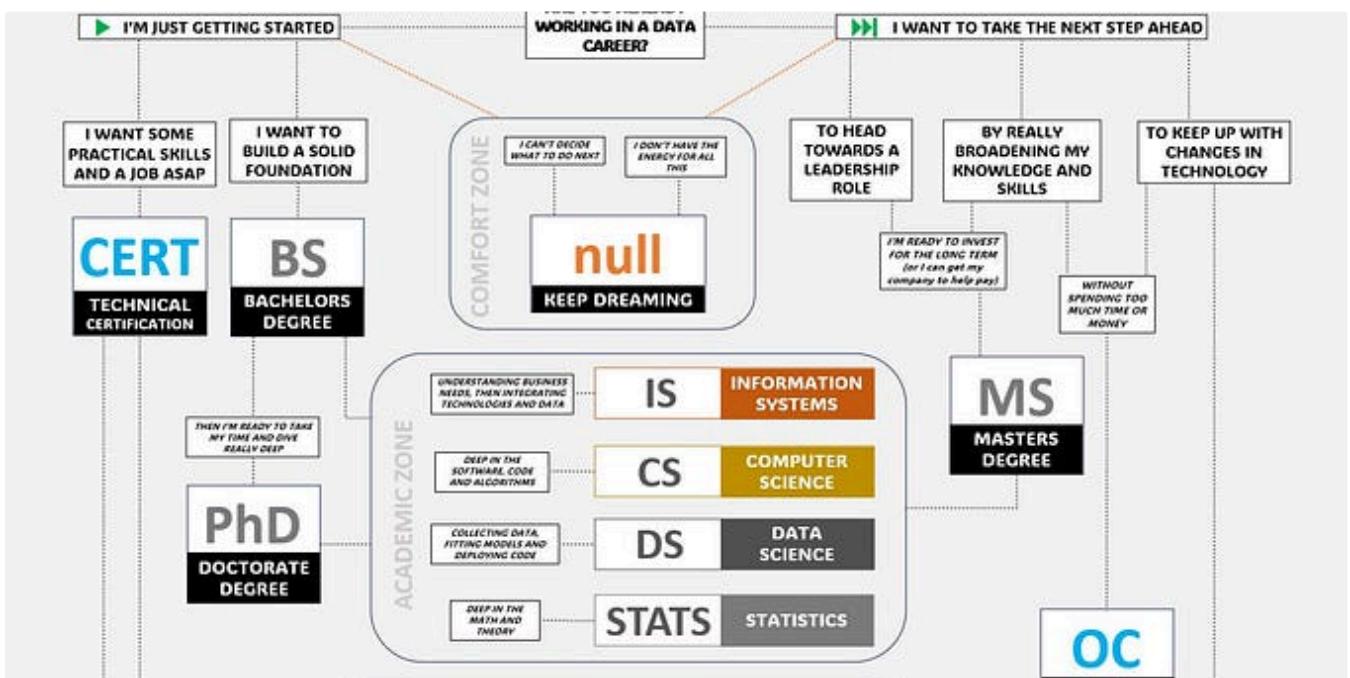
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