

A PRACTICAL GUIDE
FOR SCIENTISTS

FROM SCIENCE TO DATA

7 Step Guide to Mastering Your
Career Change Into
Data Analytics



PAUL BAEK, Ph.D.

For all the scientists
who seek clarity
in their new
career.

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What's inside this guide?

Cover

Copyright

A Personal message to you

Introduction

7 step guide

1. Understanding the Data Analytics Landscape
2. Bridging the Gap: Transitioning from Science to Data Analytics
3. Choosing the Right Data Career Path (for YOU)
4. Learning the Basics with Affordable Courses
5. Building a Personal Brand on LinkedIn
6. Gaining Hands-On Experience
7. Navigating Job Search Strategies & Interviews
8. (BONUS) How to Talk to Your Parents and Friends After Launching into Your Data Career

Concluding motivational remarks

A PERSONAL MESSAGE TO YOU

“Everything happens for a reason. It’s up to you to see the good in it.”

The prospect of transitioning from one career to another is never easy, especially when it feels like you’re leaving everything behind. For many scientists considering a move into data analytics, this feeling is all too real. You might look at the world of data, with its complex technical requirements and unfamiliar tools, and think to yourself, *“How could I possibly fit in there? Would I be throwing away everything I’ve worked so hard to learn?”*

I get it. This transition can seem like an insurmountable challenge. The thought of discarding years of knowledge and experience in biology, chemistry, physics, or any other scientific field to step into a whole new arena can be daunting. And worst of it all, it can often feel like you’re starting from scratch. But here’s the truth: you’re not starting from scratch at all.

I’ve seen it firsthand - people who’ve made this transition and found themselves thriving in a data analytics career. They didn’t abandon their scientific knowledge or the skills they’d honed over years of research and analysis. Instead, they took those skills and applied them in a new way.

The same meticulous attention to detail, the ability to ask the right questions, and the drive to solve complex problems that made them successful scientists also make them exceptional data analysts, or I would like to call us, *data storytellers*. If anything, they were able to leverage these strengths to stand out in the crowded field of data analytics. And the best part? They didn't have to throw everything away to make the change in their career.

In fact, making the shift into data analytics isn't about leaving your past behind. It's about recognising the value of what you've learnt and finding ways to apply it in a new environment. The knowledge you've gained in your scientific career has tremendous amount of *value* - it's the foundation upon which you'll build your new skills. And while there is undoubtedly a small learning curve when it comes to mastering tools like Excel, SQL, or PowerBI, the good news is that you've already developed the core competencies that will help you excel in these areas.

The Fear of Starting Over

I understand the fear. The fear of not being good enough in this new world. The fear that you'll be entering a field where everyone else seems to know more, or the fear that you might not be able to pick up the technical skills fast enough. And yes, there's also the fear of leaving the familiarity of your scientific career behind for something unknown. It's a fear that holds many back from pursuing their passions in data analytics. But what if I told you that the things you fear most are actually your greatest strengths?

When you've spent years working in science, you've been trained to think analytically, to approach problems methodically, and to challenge assumptions. These are exactly the kinds of skills that data analysts use every single day.

The transition might feel like a leap of faith at first, but it's a leap grounded in the solid foundation of skills and experiences that have made you who you are.

The Struggles of Transitioning

The first hurdle for many scientists transitioning into data analytics is simply understanding where to start. The vastness of the field can be overwhelming. Data analytics encompasses a wide range of roles: *Data Analyst*, *Data Scientist*, *Data Engineer*, and many more. Each of these roles requires different technical skills, and it can be challenging or often confusing to know which path is the right one for you.

I've watched many of my scientist friends struggle with these questions. They wonder, *"Do I need to learn coding right away?"* or *"What if I don't have a strong computer science background?"* or *"What if I'm not familiar with data visualisation tools like PowerBI?"* These are valid concerns, but I can assure you that there is a place for you in the world of data analytics - even if you don't have a background in coding or data science. It's not about starting from scratch; it's about leveraging what you already know and filling in the gaps where needed.

One of the biggest struggles for scientists is the fear of failure (well, at least for me it was). The feeling that you won't be able to make the leap, or that you'll never be able to learn the technical skills necessary to succeed. I've seen scientists who were brilliant in their fields - masters of statistical analysis, data collection, and problem-solving - hesitate at the idea of applying those skills in a new context. I often felt like I would be starting from zero, and the thought of entering a completely new field was both intimidating and overwhelming.

But here's the trick: you are already equipped with the skills you need to succeed. You just needed a little guidance on how to translate those skills into the language of data analytics.

The Realisation: It's Not Starting Over

What I came to realise through my own experience and the experiences of others is that transitioning into data analytics is not about starting over - it's about expanding what you already know. It's about taking the scientific method that has served you well for years, the skills of analysing complex data sets, and applying them to business problems, trends, and real-world data. The process may not come easy, and it may not happen overnight, but it is absolutely possible. It's what I would tell my old self if I could travel back in time because I was standing exactly where you are now.

The key to a successful career transition is to see the overlap between the skills you already have and the skills you need to develop. The beauty of a scientific background is that you've been trained to think critically and systematically, to break down complex problems into manageable parts, and to analyse, present and communicate data in meaningful ways. These are exactly the types of competencies that are in high demand in data analytics.

You might feel that the world of data analytics is vast and daunting, but I assure you, once you understand the core skills you need to learn and the resources available to help you, the transition becomes a much more manageable process. It's about developing a mindset of growth and continuously seeking out new tools, methods, and techniques that can help you analyse, interpret and communicate data in the ways that businesses and organisations need.

It's about evolving as a professional while remaining rooted in the skills and experiences that made you the expert you are today.

Looking Ahead

Over the course of this ebook, I'll take you through the step-by-step process of transitioning into data analytics. I'll provide practical guidance on how to research the market, identify the skills you need, and even how to apply for jobs once you're ready. But the most important thing I want you to take away from this ebook is that you are not starting from scratch - you're simply shifting gears. The journey you're about to embark on might feel intimidating at times, but trust me, it's worth it. I'll guide you through the ups and downs, providing insights and actionable steps every step of the way.

By the end of this ebook, you'll understand that the fears and doubts that initially held you back were simply obstacles on the path to your next big career move. You'll see that your scientific background is not something you need to leave behind, but something you can leverage to stand out in the data world. Your skills are not outdated; they are the foundation for something even greater.

So, let's get right into it and find the next career you've been desiring.

INTRODUCTION

“What you experience in life is preparing you for what you’ve asked for. Trust in yourself and just take the step.”

Welcome, and congratulations on taking the first step toward a dynamic and growing career in data analytics. As a reader, chances are you've spent years honing your scientific expertise in a field like biology, chemistry, physics, or another discipline. Perhaps you've worked in a lab or gathered mountains of data for experiments, but now, you're ready for something new. Maybe you're looking to pivot, or perhaps you've already seen the potential that data analytics offers in a variety of industries.

This ebook is a practical guide designed to help you leverage your scientific skills to build a successful data analytics career. From my own experience, as well as learning from scientists, we are naturally suited to data roles due to their analytical mindset, problem-solving expertise, and ability to interpret complex datasets. This ebook will provide actionable steps to bridge the gap between science and data, with clear examples and strategies.

Why Scientists Are Perfect for Data Careers

Scientists have a unique edge when it comes to data. You are already adept at problem-solving, critical thinking, and analytical reasoning. You've spent years refining these skills in environments where data collection and analysis are essential to discovering new knowledge or validating hypotheses.

In the realm of data analytics, these same skills are invaluable. You understand the importance of rigorous data collection, how to spot outliers, and how to think critically about data sets. Additionally, the scientific method - testing, experimenting, iterating - is almost identical to the process of analysing data and drawing conclusions in data analytics. The fundamental difference lies in the context, but your toolkit is already well-equipped for the transition.

Imagine taking the skills you use in a lab and applying them to datasets that inform business decisions or solve real-world problems in fields such as healthcare, marketing, or finance. As a scientist, you are already a data storyteller - you interpret results, communicate findings, and draw conclusions. The beauty of data analytics is that it builds on these same foundations and takes them to new, impactful heights.

The Data Analytics Field: A Growing Opportunity

The demand for data professionals has surged over the past decade, with no signs of slowing down, even in the age of AI. The world generates vast amounts of data daily, and companies across all sectors - from healthcare to finance to entertainment - are eager to harness that information to drive decisions and innovation.

In fact, according to recent statistics, data-related roles are among the fastest-growing job categories in the world.

By 2025, it's estimated that the global data analytics market will be worth over \$500 billion. This presents an unparalleled opportunity for professionals like us scientists to pivot into a career where your analytical skills will not only be valued but in high demand.

7 STEP GUIDE

STEP 1

Understanding the Data Analytics Landscape

"All of your success starts with an intention."

We are living in the era of data. Every click, transaction, and decision generates information that companies are desperate to understand. Businesses that master data gain a competitive edge - whether it's predicting customer behavior, optimising operations, or automating manual tasks. And behind every data-driven decision, there's a data professional who translates raw values into meaningful insights.

Think about it this way: data is the *atom or DNA* of every modern organisation. It carries the information that determines how a company evolves, grows, and adapts. Just as a scientist interprets genetic sequences to understand living organisms, a data analyst deciphers patterns in data to understand business operations.

Data and Its Role in Organisations

As you already know, data is simply the collection of facts, figures, observations, and statistics that can be analysed to derive meaningful insights. Based on the industry you want to immerse in, data is typically generated from all sorts of data sources, including:

- Banking and accounting systems
- Social media platforms
- Customer feedback and surveys
- IoT devices and sensors
- Enterprise applications like ERP and CRM systems

The Many Faces of Data Analytics

The term “data analytics” covers a broad spectrum of roles, each with its own specialisation. Understanding these roles can help you find where your skills and interests fit best:

- **Data Analyst:** The detective of the data world. They collect, clean, and analyse data to find trends, create dashboards, and support business decisions.
- **Data Scientist:** The researcher of the industry. They build predictive models, apply machine learning, and run statistical experiments.
- **Data Engineer:** The architect behind the scenes. They design pipelines, transform raw data, and ensure everything runs smoothly in databases and cloud systems.
- **Business Intelligence Analyst:** The storyteller. They transform complex data into easy-to-digest reports and dashboards that executives rely on.
- **Data Governance Specialist:** The security guard of data. They ensure that data is accurate, compliant with regulations, and ethically managed.

The PASS Formula for Career Growth in Data Analytics

After working in various industries doing management roles for over 7 years, I've come a realisation that there is a golden *formula* that can be applied to any job in the world.

That formula, my friends, is very simple and once I understood this early on in my career, I was able to transition into any industry as it helped me frame my skills in a way that made sense to hiring managers.

I want to share with you the **Problem-Audience-Skill-Solution (PASS)** formula and it goes like this:

To solve **[insert problem]**,

for **[insert target audience]**,

I have **[insert skills]**,

where I can provide **[insert solution]**.

For example, when I moved into data analytics, I reframed my experience like this:

To **automate monthly risk reporting**,

for **risk managers**,

I have **chart-making and presentation skills**,

where I can **develop Power BI dashboards**.

It's all about *what problem can you solve - for whom - with what skill - how you can solve that problem*. That being said, it's important to understand what problems exist in the industry and how data analytics can help solve them.

Where Do You Go From Here?

At this point, you might still have doubts.

Am I really cut out for this?

What if I fail?

What if I don't enjoy it?

Trust me, I had all these questions too and it's a complete *natural* response. I mean you've spent years honing your expertise in science, pushing boundaries in research, running experiments, and solving complex problems. But change isn't about having all the answers from the start - it's about taking the first step.

In the next step, I'll take you through my personal journey from science to data analytics - the challenges, the fears, the pivotal moments that made me realise this was the right path. If you're feeling stuck, this next step is for you.

Because if I could do it, so can you.

STEP 2

Bridging the Gap:

Transitioning from Science to Data Analytics

*“Nothing in this lifetime is permanent
and that’s the most beautiful truth
there is.”*

When I first thought about leaving my career in science, I was terrified. Not just uncertain or hesitant - *absolutely* terrified.

I had spent years studying, researching, and working towards a career I thought was my path. I had a Ph.D. in Material Science, a title that I had worked relentlessly for, and yet, I found myself staring at my future with unease. It wasn’t just about the job market or the limitations in career growth. It was something deeper. I felt unfulfilled.

But even as I wrestled with that realisation, I was scared to say it out loud.

What would my parents think?

I had spent so many years making them proud, proving that my hard work and sacrifices were worth it. How could I tell

them that I wanted to pivot? That I wanted to leave behind something I had invested years of my life into?

What would my friends and colleagues say?

To them, I had “made it.” A scientist. A researcher. Someone who had achieved something remarkable. Would they see me as someone who gave up? Someone who couldn’t cut it in academia?

The fear of judgement was paralysing.

But here’s the thing about fear - it grows when you let it fester in silence.

The Turning Point: Taking the First Step

What gave me the courage to move forward wasn’t some grand revelation. It wasn’t a sudden moment of clarity. It was something far simpler.

I simply allowed myself to explore.

Instead of making a drastic decision overnight, I started learning about data analytics and the day to day life of a data analyst - because to *be* one, you’ve got to *think* like one. So I read about it, took an online course, talked to friends in data and discovered something interesting: I wasn’t starting from zero.

In fact, the more I learned, the more I saw the parallels between my scientific background and the world of data analytics.

Take scientific research, for example.

Every experiment I ran involved collecting data, analysing it,

and presenting my findings - it's the same fundamental process used in data analytics.

Much like collecting quantitative or qualitative data from scientific experiments and presenting them as figures in a research paper, the same concept applies in data analytics. The only real difference is the context - instead of studying physical properties of a material or chemical reactions, I was analysing business performance, operational costs, or risk data.

I realised I wasn't abandoning my skills - I was repurposing them.

Reframing My Own Value

Once I understood that I already had transferable skills, the next step was *rebranding* myself.

This wasn't just about updating my CV - it was about seeing myself differently. Instead of thinking, I'm a scientist who doesn't belong in data analytics, I started saying:

***“I’m an analytical thinker
who uses data
to solve complex problems.”***

The truth is, your career is just a reflection of how you frame your skills and experiences.

For example, I worked in the public transport sector where I analysed the inventory and financial data of roads and transport assets to ensure accurate valuation. This data was crucial for calculating government tax obligations and planning infrastructure development.

On the surface, it seemed different from my previous

scientific work. But in reality, I was applying the same core skills:

- 1.Transforming and analysing data with lots and lots of rows and columns
- 2.Using Excel (a tool I had already mastered in my research career) to create charts and figures
- 3.Translating technical findings into plain language for decision-makers in the public transport organisation.

The ability to extract insights from data and communicate them effectively is one of the most valuable skills in data analytics - and I already had it.

The same applied to presentation skills. In academia, you present your research to peers and professors. In industry, you present insights to stakeholders* and executives. Different audience, same skill.

The key difference between *academia* and *industry*?

Clarity in career paths.

In research, career growth often feels uncertain - you're chasing funding, postdocs, or tenure. But in data analytics, roles are structured with clear pathways. You start as a Data Analyst, grow into a Senior Analyst, and can evolve into specialised roles like Data Scientist, Data Engineer, or even Chief Data Officer.

That clarity gave me the confidence to move forward.

*You will see or hear this word *Stakeholders* a lot in the industry. Stakeholders simply mean those who *care* about the work or impacted by the work. People who have a stake in the outcome.

You Don't Have to Have It All Figured Out

Here's what I want you to take away from this step:

- Fear is normal - every career change feels uncertain, especially when others have expectations for you.
- You already have transferable skills - you're not starting from scratch, you're reframing what you already know.
- Your career is a reflection of how you brand yourself - you can transition into data analytics by simply learning how to speak the industry's language.
- You don't need permission to explore - start learning, start experimenting, and let your *own* curiosity guide *you*.

If you're at the same crossroads I was at in 2018, know this: you're not alone.

In the next step, I'll get into the practical steps - how to choose the right career path in data analytics, build hands-on experience, and develop the skills and personal branding you need to land your first data job.

Your journey has already begun. Let's keep moving forward.

STEP 3

Choosing the Right Data Career Path (for YOU)

“There’s no such thing as making the right decision. You make a decision and don’t look back.”

Stepping into the world of data analytics can feel overwhelming at first. There are so many different roles, and if you’re coming from a science background, you might wonder:

- Which path is right for me?
- Do I need to learn coding?
- Will my existing skills be useful?

Just as we have specialised in distinct disciplines - biology, chemistry, and physics - you can also specialise in different roles. Understanding the purpose and the different roles within data analytics will help you find the best fit based on your interests, strengths, and long-term career goals.

Insert flow chart of data lifecycle _> Data engineer -> data analyst & scientist

Common Data Roles

Data roles can be broadly categorised into four main positions (or archetypes I would like to call them): Data Analyst, Data Scientist, Data Engineer and Data Governance Professional. These specialised roles work together to collect, process, analyse, and interpret data in an organisation.

Data Analyst is the storyteller who collects, cleans, and analyses data to help businesses make informed decisions. They create reports and dashboards using tools like Excel, Power BI, or SQL.

Who it's for? If you enjoy working with numbers, visualising trends, and explaining insights, this role is a great starting point.

Data Scientist is the researcher of data who builds predictive models, performs statistical analysis, and works with machine learning. They use Python, R, SQL, and machine learning techniques.

Who it's for? If you love statistics, programming, and solving complex problems, this might be your path.

Data Engineer is the builder who builds the pipelines and infrastructure that store and process large amounts of data. They work with SQL, Python, and cloud platforms like AWS or Azure.

Who it's for? If you enjoy building systems, automating processes, and working with databases, this could be a great fit.

Data Governance Professional is the guardian of data who ensures that data is accurate, secure, and used ethically. They work with data policies, privacy laws, and compliance standards.

Who it's for? If you have a keen eye for detail, enjoy documentation, and care about data security, this is a crucial and growing field.

Your Data Career Plan: The Next Steps

Now that you have a basic idea of where you might fit, here's a detailed **5 to 10 year career plan** for each of the roles so skip to the role that captures your eye.

Data Analyst

Responsibilities: As a Data Analyst, your main responsibilities are transforming raw data into insights to help businesses make informed decisions. Your focus is on reporting, visualisation, and identifying trends.

Core skills: SQL, Excel, Power BI, Tableau, Power Automate.

Career Path: Your journey from an entry-level Data Analyst to a senior data leader depends on your skills, experience, and career goals. Below is a **5 to 10-year career roadmap** showing where it can take you based on your interests and expertise.

Years 0-2:

Entry-Level Data Analyst

Roles:

- Data Analyst (Entry/Graduate)
- Business Intelligence (BI) Analyst
- Reporting Analyst

What You'll Do:

- Clean, transform, and analyse data using Excel, and SQL.
- Build dashboards and reports using Power BI or Tableau to help stakeholders make data-driven decisions.
- Work with business teams to answer questions with data insights.

Key Skills to Focus On:

- ✓ SQL, Power BI, Excel, Power Automate
- ✓ Understanding business processes and storytelling with data

Years 2-4:

Mid-Level Data Analyst → Specialisation

Roles:

- Senior Data Analyst
- Power BI Developer
- Marketing/Product Analyst
- Data Governance Analyst
- Data Engineer (Entry-Level)

What You'll Do:

- Handle larger, more complex datasets and automate reporting.
- Work cross-functionally with marketing, finance, or product teams.
- Optimise dashboards and reports, improving business insights.
- Gain exposure to data modelling, ETL pipelines and cloud databases.

Key Skills to Focus On:

- ✓ Advanced SQL, Python (ETL, data wrangling)
- ✓ Power BI (advanced DAX), Power Automate, Copilot & ChatGPT
- ✓ Cloud computing (MS Azure, AWS, Google BigQuery)
- ✓ Data modeling and database optimisation
- ✓ Data governance, privacy laws (GDPR, NZ Privacy Act)

Years 4-6:

Senior Level – Expanding Influence & Leadership

Roles:

- Data Product Owner
- Analytics Manager
- Senior Power BI Developer
- Data Scientist (with ML expertise)
- Data Governance Manager

What You'll Do:

- Lead projects and mentor junior analysts.
- Work closely with executives to define KPIs and business strategies.
- Manage teams or lead data governance initiatives.
- Work on predictive modeling and automation.

Key Skills to Focus On:

- ✓ Data architecture, cloud data engineering
- ✓ Leadership, stakeholder communication
- ✓ Product & program management,
- ✓ Advanced machine learning (for Data Scientists)
- ✓ Data governance and compliance strategies

Years 6-10+:

Senior Leadership & Specialisation

Roles:

- Head of Data Analytics / BI / Data Science
- Chief Data Officer (CDO)
- Principal Data Scientist
- Data Architect
- Director of Analytics

What You'll Do:

- Shape the company's data strategy and lead teams.
- Work closely with C-level executives to drive data-driven decisions.
- Design scalable data infrastructure and cloud solutions.
- Oversee data security, privacy, and compliance at an organisational level.

Key Skills to Focus On:

- ✓ Leadership, strategic thinking, and stakeholder management
- ✓ Advanced machine learning and AI (for data science roles)
- ✓ Cloud data architecture and engineering
- ✓ Compliance and enterprise-wide data governance

Choosing your Data Analyst Career

Are you passionate about leadership?

✓ Analytics Manager → Director of Analytics

Love machine learning?

✓ Data Scientist → Principal Data Scientist

Enjoy data security & compliance?

✓ Data Governance → CDO

Passionate about technical problem solving?

✓ Data Engineer → Data Architect

Trends in 2025:

- **Focus on automation:** Many companies are adopting automated dashboards, so familiarity with tools like Power BI and Looker is highly sought after.
- **Domain-specific analysts:** There's a growing need for analysts in niche areas like healthcare, sustainability, and fintech, aligning well with scientific expertise.

If you need help mapping out your next steps, feel free to reach out to me at hello@paulbaek.com for career coaching.

Data Scientist

Responsibilities: As a Data Scientist, your main responsibilities are developing predictive models, machine learning algorithms, and statistical analyses to solve complex business problems.

Core skills: Python, R, SQL, ML algorithms, deep learning, cloud computing, A/B testing.

Career Path: A Data Scientist career path can take multiple directions depending on interests, skills, and industry demand. Here's a **5 to 10 year career roadmap** of how a Data Scientist's career typically progresses, along with potential specialisations and leadership opportunities.

Years 0-2:

Entry-Level Data Scientist

Roles:

- Junior Data Scientist
- Machine Learning Engineer (Entry-Level)

What You'll Do:

- Develop and test simple machine learning models.
- Work with structured and unstructured data to clean, preprocess, and prepare datasets.
- Collaborate with teams to answer questions and make predictions based on data.
- Start to build expertise in programming languages such as Python, R, and SQL.

Key Skills to Focus On:

- ✓ Python (Pandas, NumPy, Scikit-learn), R
- ✓ SQL, Data wrangling, and pre-processing techniques
- ✓ Basic statistical analysis and hypothesis testing
- ✓ Introduction to machine learning models

Years 2-4:

Mid-Level Data Scientist → Specialization

Roles:

- Data Scientist (Mid-Level)
- Machine Learning Specialist
- Quantitative Analyst
- AI Engineer

What You'll Do:

- Take on more complex machine learning projects and algorithms, such as neural networks, deep learning, and natural language processing (NLP).
- Optimise models for better performance and accuracy.
- Begin leading smaller data science projects and experiments, potentially managing interns or junior data scientists.
- Work with business teams to interpret data insights and apply them to specific use cases, like marketing, finance, or operations.

Key Skills to Focus On:

- ✓ Advanced machine learning (XGBoost, Random Forests, Deep Learning)
- ✓ Natural Language Processing (NLP), Computer Vision
- ✓ Cloud platforms (Azure, AWS, GCP)
- ✓ Statistical modeling and time-series analysis

Years 4-6:

Senior-Level Data Scientist – Thought Leader

Roles:

- Senior Data Scientist
- Lead Machine Learning Engineer
- Data Science Manager
- AI Researcher

What You'll Do:

- Lead larger projects, working with data engineers and other data scientists to design and deploy advanced predictive models at scale.
- Guide the company's AI strategy, including how data science integrates with business processes.
- Mentor and manage junior data scientists, establishing best practices for model development and deployment.
- Communicate findings to key stakeholders, including executives, and ensure models align with strategic objectives.
- Potentially focus on niche areas like reinforcement learning, AI research, or real-time systems.

Key Skills to Focus On:

- ✓ Deep learning, Reinforcement learning, advanced NLP
- ✓ Leadership and team management
- ✓ Full-stack deployment of machine learning models
- ✓ Data ethics, model interpretability, and fairness

Years 6-10+:

Senior Leadership & Specialization

Roles:

- Principal Data Scientist
- Head of Data Science / Machine Learning
- Chief Data Scientist / AI Officer (CDO)
- Data Science Consultant

What You'll Do:

- Establish the organisation's data science vision and long-term strategy.
- Oversee large-scale AI and machine learning initiatives, ensuring they are properly resourced and executed.
- Direct and mentor a team of data scientists, data engineers, and other technical professionals.
- Collaborate with executives to align AI initiatives with broader business goals, including digital transformation.
- Become an advocate for AI and data science innovation in your industry, possibly contributing to thought leadership in the form of conferences, publications, or community outreach.

Key Skills to Focus On:

- ✓ Enterprise-level machine learning systems
- ✓ Cutting-edge AI technologies, including generative AI and autonomous systems
- ✓ Data governance, privacy, and security policies
- ✓ Public speaking, writing papers, or contributing to industry discussions

Choosing your Data Scientist Career

Do you enjoy coding and developing models?

✓ Senior Data Scientist → Principal Data Scientist

Love working with AI technologies?

✓ AI Researcher → Head of AI

Want to lead data-driven innovation in organisations?

✓ Chief Data Scientist → Data Science Consultant

Trends in 2025:

- **Generative AI:** Tools like ChatGPT are being integrated into workflows, making it easier for scientists to build prototypes.
- **Interdisciplinary collaboration:** Data Scientists are increasingly required to work with engineers and domain experts, making communication skills critical.

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Data Engineer

Responsibilities: As a Data Engineer, your main responsibilities are building and maintaining data pipelines, ensuring data infrastructure is scalable across the organisation

Skills: SQL, Python, Hadoop, Cloud Platforms (Azure, AWS).

Career Path: You are the architect who builds the infrastructure that supports the data science and analytics work that drives decisions and innovations. Here's a **5 to 10 year career roadmap** to guide your Data Engineering journey.

Years 0-2:

Entry-Level Data Engineer

Roles:

- Data Engineer
- ETL Developer

What You'll Do:

- Design and build basic data pipelines and work with databases to integrate data from various sources.
- Write efficient SQL queries to extract and manipulate data.
- Assist in the development of the data warehouse and the overall data architecture.
- Collaborate with data scientists and analysts to ensure that the data infrastructure supports the needs of downstream analysis.

Key Skills to Focus On:

- ✓ SQL (Advanced), Data Modeling, Python
- ✓ ETL (Extract, Transform, Load) processes
- ✓ Familiarity with cloud platforms (MS Azure, AWS,)
- ✓ Basic knowledge of data storage solutions (e.g., PostgreSQL, MySQL, Hadoop, or NoSQL databases)

Years 2-4:

Mid-Level Data Engineer

Roles:

- Senior Data Engineer
- Senior ETL Engineer
- Database Engineer
- Cloud Data Engineer

What You'll Do:

- Develop, maintain, and optimise more complex data pipelines for large-scale data processing.
- Implement data storage solutions like data lakes, warehouses, or cloud storage systems.
- Integrate new data sources and manage data quality.
- Collaborate with other teams (such as data scientists or business analysts) to ensure that the data infrastructure supports their analysis and reporting needs.
- Take on a more active role in choosing the right tools and technologies for the data systems.

Key Skills to Focus On:

- ✓ Advanced SQL, Python for automation
- ✓ Cloud Data Engineering (AWS, Azure, GCP)
- ✓ Data Warehousing (Redshift, Snowflake, BigQuery)
- ✓ Data Lakes and NoSQL Databases (MongoDB, Cassandra)
- ✓ Familiarity with Big Data tools (Hadoop, Spark)

Years 4-6:

Senior Data Engineer → Leadership

Roles:

- Lead Data Engineer
- Data Engineering Manager
- Big Data Engineer

What You'll Do:

- Take charge of developing and implementing complex data infrastructure solutions for large-scale projects.
- Manage a team of junior data engineers or other technical staff, ensuring best practices and high standards in building scalable, reliable data pipelines.
- Work closely with senior leadership to develop and execute the company's data strategy.
- Lead in areas such as cloud architecture, data security, and compliance.
- Contribute to strategic decisions regarding the evolution of data systems and technologies used by the company.

Key Skills to Focus On:

- ✓ Data Architecture (Data Modeling, Schema Design)
- ✓ Advanced cloud computing (cloud security, cloud architectures)
- ✓ DevOps principles for data engineering
- ✓ Distributed systems (Kafka, Spark, Hadoop, Kubernetes)
- ✓ Mentoring, leadership, and team management

Years 6-10+:

Expert-Level Data Engineer → Data Engineering Leader

Roles:

- Principal Data Engineer
- Head of Data Engineering
- Director of Data Engineering
- Chief Data Officer (CDO)
- Consultant Data Engineer

What You'll Do:

- Oversee and manage large-scale, mission-critical data engineering projects that span the entire organisation.
- Define the strategic direction of data engineering in the company, influencing decisions on technology stacks, architectures, and long-term objectives.
- Mentor and provide guidance to data engineering teams across departments.
- Play a key role in integrating machine learning models into production systems and ensuring their scalability.
- Build and promote best practices across the organisation, pushing forward the boundaries of data technology.

Key Skills to Focus On:

- ✓ Data governance, data security, and data privacy regulations (GDPR, CCPA)
- ✓ Leadership, strategic thinking, and stakeholder communication
- ✓ DataOps and automation of data pipelines
- ✓ Cloud infrastructure management
- ✓ Cutting-edge data technologies (serverless computing, real-time analytics, AI integration)

Choosing your Data Engineer Career

Love building robust, scalable systems for big data?

✓ Principal Data Engineer → Head of Data Engineering

Looking to lead teams of engineers and manage strategic data initiatives?

✓ Data Engineering Manager → Chief Data Officer

Interested in transforming large, complex datasets into meaningful insights for businesses?

✓ Senior Data Engineer → Consultant Data Engineer

Trends in 2025:

- **Cloud expertise:** Companies are moving to cloud platforms, so knowledge of AWS or Azure is critical.
- **DataOps:** A growing trend where Data Engineers implement DevOps principles to make data pipelines more agile and scalable.

If you need help mapping out your next steps, feel free to reach out to me at hello@paulbaek.com for career coaching.

Data Governance Professional

Responsibilities: Data governance professionals are the guardians of data. Their role is to ensure that data is well-managed, trustworthy, and used ethically, balancing business needs with regulatory requirements.

Core skills: Data management tools, SQL, database fundamentals, metadata management, Regulatory knowledge, data privacy

Career Path: the guardians of data integrity, security, and compliance within an organisation. Here's a **5 to 10 year career roadmap** to guide your Data Governance Professional journey.

Years 0-2:

Entry-Level Data Governance Professional

Roles:

- Data Governance Analyst
- Data Steward

What You'll Do:

- Help maintain data catalogs, data dictionaries, and data lineage documentation.
- Assist in data quality checks, ensuring completeness and consistency.
- Learn about data compliance laws such as GDPR, CCPA, and New Zealand's Privacy Act.
- Defining data management best practices.

Key Skills to Focus On:

- ✓ Data management tools (Collibra, Alation, Informatica)
- ✓ Basic SQL for data quality checks
- ✓ Privacy laws and compliance frameworks (GDPR, CCPA, New Zealand Privacy Act)

Years 2-4:

Mid-Level Data Governance Professional

Roles:

- Data Governance Specialist
- Data Privacy Officer
- Information Security & Compliance Analyst
- Data Quality Manager

What You'll Do:

- Define data standards and policies for the organisation.
- Conduct data risk assessments and ensure compliance with regulations.
- Work closely with IT teams to implement role-based access controls (RBAC).
- Lead data quality initiatives, ensuring business units adhere to governance policies.
- Manage data lineage and metadata to track how data flows across systems.

Key Skills to Focus On:

- ✓ Data security frameworks (ISO 27001, NIST)
- ✓ Data governance software (Collibra, Talend, IBM InfoSphere)
- ✓ Advanced SQL and database structures
- ✓ Policy writing and stakeholder communication

Years 4-6:

Senior Data Governance Leader – Strategy & Risk Management

Roles:

- Senior Data Governance Consultant
- Head of Data Governance & Compliance
- Risk & Data Protection Officer
- Enterprise Data Governance Lead

What You'll Do:

- Develop organisation-wide data governance frameworks.
- Establish data ethics programs and ensure compliance across departments.
- Oversee governance for AI and machine learning models to prevent biased or unethical use of data.
- Collaborate with legal, compliance, and IT teams to balance data privacy and business intelligence needs.
- Implement Data Governance Maturity Models to assess and improve governance processes.

Key Skills to Focus On:

- ✓ Legal expertise in data compliance (GDPR, CCPA, APRA, Privacy Act NZ)
- ✓ Governance for AI and machine learning ethics
- ✓ Data security and risk assessment
- ✓ Change management for data-driven organisations

Years 6-10+:

Executive-Level Data Governance – Shaping Industry Standards

Roles:

- Chief Data Officer (CDO)
- Data Governance Consultant (Independent or at Big 4 Firms)
- Chief Risk & Compliance Officer (CRO)

What You'll Do:

- Shape national and industry-wide data governance policies.
- Advise executive teams on data governance investment strategies.
- Oversee multi-country compliance efforts for global organisations.
- Speak at industry events and influence legislation on data privacy.
- Lead the digital transformation of data governance in AI-driven businesses.

Key Skills to Focus On:

- ✓ Business leadership and executive communication
- ✓ Data governance at the global enterprise level
- ✓ AI governance and emerging risks in ethical AI
- ✓ Mergers & acquisitions (M&A) and data consolidation strategies

Choosing your Data Governance Career

Do you love policies and structure?

✔ Data Governance Lead → Chief Data Officer

Interested in legal compliance?

✔ Data Privacy Officer → Chief Risk & Compliance Officer

Want to shape industry-wide data practices?

✔ Data Governance Consultant → Executive Leadership

Trends in 2025:

- **AI-Driven:** AI is making data governance smarter by automatically detecting sensitive data, tracking data lineage, and enforcing policies in real time. This means less manual work and fewer compliance headaches.
- **Privacy-First Data Governance:** With stricter privacy laws worldwide, companies are focusing on keeping data secure by default. Think encryption, user consent, and tighter access controls to build trust and stay compliant.

If you need help mapping out your next steps, feel free to reach out to me at hello@paulbaek.com for career coaching.

STEP 4

Learning the Basics with Affordable Courses

“You are not nervous. You are just not prepared.”

The journey to mastering data analytics begins with learning the right tools and techniques. Luckily, there are many affordable courses designed to help you acquire the foundational skills you need to kickstart your career.

In this step, we'll explore *top-rated* courses, their *costs* (in NZD), their *pros and cons* based on internet reviews, and how they align with specific data roles in 2025.

1. Google Data Analytics Certificate

- Platform: Coursera
- Duration: ~6 months (10 hours/week)
- Cost: \$70/month (Coursera subscription) ≈ \$420 NZD for 6 months
- Overall Rating: ★★★★★ (4.8/5 on Coursera)

What It Offers:

This course is beginner-friendly and covers:

- Data cleaning and visualisation using Excel and Tableau.
- Basic SQL for querying databases.
- Data storytelling and communication.

Best For:

- Data Analyst: This course provides a comprehensive introduction to analysing data, creating reports, and presenting insights.
- Data Scientist: A great stepping stone for beginners but lacks advanced statistical or programming content.

Why It's Useful:

The certificate focuses on real-world applications, like creating dashboards and analysing datasets. The hands-on projects simulate scenarios you might encounter in a business setting, making it perfect for those completely new to the field.

2. “Python for Everybody” by Dr. Charles Severance

- Platform: Coursera
- Duration: ~3 months (8 hours/week)
- Cost: \$70/month ≈ \$210 NZD for 3 months
- Overall Rating: ★★★★★ (4.9/5 on Coursera)

What It Offers:

This course is designed to teach Python from scratch and covers:

- Writing Python programs for data processing.
- Using Python libraries like Pandas and NumPy.
- Working with APIs to retrieve data.

Best For:

- Data Scientist: Teaches foundational programming, critical for building models and analysing data.
- Data Engineer: Provides essential programming skills for automating data pipelines.

Why It's Useful:

Python is the most in-demand programming language in data analytics. Scientists will appreciate its straightforward syntax, and the course's focus on manipulating and processing data is a great transition from working with lab datasets.

3. SQL for Data Science

- Platform: Coursera (offered by the University of California, Davis)
- Duration: ~4 weeks (4 hours/week)
- Cost: \$70/month $\approx$ \$70 NZD for one month
- Overall Rating: ★★★★★ (4.7/5 on Coursera)

What It Offers:

- SQL fundamentals, including filtering, joining, and aggregating data.
- Case studies on solving real-world problems with SQL.
- Hands-on projects to practice SQL queries.

Best For:

- Data Analyst: SQL is essential for querying databases and analyzing data.
- Data Engineer: Provides a foundational understanding of working with data in relational databases.

Why It's Useful:

Most organisations store data in relational databases, and SQL is the language to access and manipulate it. Scientists will find it analogous to designing experiments to filter and retrieve specific data points for analysis.

4. Data Visualisation with Tableau Specialisation

- Platform: Coursera
- Duration: ~4 months (5 hours/week)
- Cost: \$70/month ≈ \$280 NZD for 4 months
- Overall Rating: ★★★★★ (4.6/5 on Coursera)

What It Offers:

- Building interactive dashboards and visualisations.
- Principles of effective data storytelling.
- Real-world projects to create executive-level dashboards.

Best For:

- Data Analyst: Helps in presenting findings in an understandable and visually appealing format.
- Data Scientist: Useful for communicating the results of predictive models.

Why It's Useful:

This course is ideal for scientists who already have analytical skills but need to improve their ability to communicate findings visually. Tableau is widely used in industries for business intelligence.

5. The Complete Machine Learning Course with Python

- Platform: Udemy
- Duration: ~40 hours (self-paced)
- Cost: \$30–\$50 NZD (often discounted)
- Overall Rating: ★★★★★ (4.4/5 on Udemy)

What It Offers:

- Introduction to machine learning concepts, including regression, classification, and clustering.
- Working with Python libraries like scikit-learn and TensorFlow.
- Practical projects, such as building predictive models.

Best For:

Data Scientist: Essential for building predictive models and performing advanced analytics.

Why It's Useful:

Machine learning is a key skill for Data Scientists. This course provides hands-on projects that help you understand how algorithms work in practice. For scientists, it's like learning a new methodology to test hypotheses with data.

6. AWS Certified Data Analytics – Specialty

- Platform: AWS Training and Certification
- Duration: ~3 months (10 hours/week)
- Cost: ~\$400 NZD for training; \$200 NZD for certification exam
- Overall Rating: ★★★★★ (4.5/5 on AWS Learning Center)

What It Offers:

- Deep dive into cloud-based data solutions, including data lakes and data warehouses.
- Using AWS tools like Redshift and Athena to manage data at scale.
- Preparation for the AWS Data Analytics certification exam.

Best For:

Data Engineer: Perfect for building cloud-based pipelines and managing large datasets.

Why It's Useful:

With the rise of cloud-based platforms, expertise in AWS tools is in high demand. This course equips you with the skills needed to manage large datasets and optimize data pipelines. For scientists, it's akin to setting up automated lab instruments to streamline experiments.

7. Data Governance Fundamentals: Managing Data for Compliance & Value

- Platform: Udemy
- Duration: Approximately 3 hours
- Cost: ~\$50 NZD (subject to change; discounts may apply)
- Overall Rating: ★★★★★ (4.7/5 on Udemy)

What It Offers:

- Comprehensive introduction to data governance principles and practices.
- Insights into implementing data governance frameworks within organisations.
- Real-world examples and case studies to illustrate key concepts.

Best For:

- Data Governance Professionals: Ideal for those new to the field seeking foundational knowledge.
- Data Managers: Beneficial for managers aiming to understand governance frameworks.
- IT Professionals: Useful for IT staff involved in data management and compliance.

Why It's Useful:

This course provides a solid foundation in data governance, making it accessible for beginners. It's like getting a roadmap to navigate the complex landscape of data management, ensuring you're equipped to implement effective governance strategies in your organisation.

Action Steps: Building Your Learning Plan

1. Choose a course based on your target role:

- Data Analyst: Google Data Analytics Certificate or SQL for Data Science.
- Data Scientist: Python for Everybody or The Complete Machine Learning Course.
- Data Engineer: AWS Certified Data Analytics – Specialty.
- Data Governance: Data Governance Fundamentals: Managing Data for Compliance & Value

2. Set realistic goals: Allocate time each week for learning and completing projects.

3. Apply your knowledge: Use platforms like Kaggle or personal projects to reinforce your learning.

In the next step, we'll explore how to showcase your newly acquired skills on LinkedIn and build a personal brand that attracts data recruiters.

STEP 5

Building a Personal Brand on LinkedIn

"You are not your thoughts but you are who you think you are."

In the digital age, professional networking platforms like LinkedIn is more than a platform for job seekers - it's a stage to showcase your expertise, network with professionals, and establish yourself as a thought leader.

Thought leadership is about more than just having knowledge; it's about sharing insights, sparking discussions, and influencing how others think about a particular subject. In today's fast-moving world, where information is abundant but true expertise is rare, positioning yourself as a thought leader helps you stand out, gain credibility, and open doors to new opportunities.

For scientists, this concept isn't new. In academia, publishing research, presenting at conferences, and contributing to peer-reviewed journals are all forms of thought leadership. The difference is that in the data world, this influence is built through platforms like LinkedIn, where you can share industry trends, write about your experiences, and engage with other professionals.

Just as a scientist's discoveries shape the future of their field, a data professional's insights can drive industry advancements, influence decision-making, and establish trust. By actively sharing your knowledge, posting case studies of real-world data problems you've solved, and engaging in meaningful conversations with other data influencers, you transition from being just another job seeker to someone whose voice carries weight in the industry. In a world where data is driving everything from business decisions to government policies, being seen as a leader in this space is invaluable.

This step will guide you through crafting an optimised LinkedIn profile, finding influencers in the data analytics space, discovering active data communities, and building your presence through strategic content creation.

Step 1: Crafting a Standout LinkedIn Profile

Your LinkedIn profile is your online CV and a personal brand. To succeed in the competitive data analytics space, it must be professional, concise, and tailored to your desired role.

1. Choose the Right Headline

A strong headline should communicate your aspirations, key skills, and unique value.

- Example 1: "Transforming Data into Insights through SQL, Python, and Visualisation"
- Example 2: "Data Storyteller | Science Enthusiast | Power BI"

2. Write a Compelling "About" Section

Use storytelling to connect your scientific background with your data analytics aspirations.

Here's a template:

As a scientist, I spent years analysing complex datasets and uncovering patterns in the lab. Today, I apply those same analytical skills to help businesses make data-driven decisions. Proficient in Python, SQL, and Power BI, I am passionate about transforming raw data into actionable insights that drive results.

Pro Tip: Use ChatGPT to refine your bio.

- 1.Prompt: *Write a LinkedIn About section for a data analyst with a background in [insert your scientific background] who is skilled in Python, SQL, and Power BI.*
- 2.Customise ChatGPT's response to reflect your personality and achievements.

3. Highlight Key Skills

Add both technical and soft skills.

- Technical Skills: SQL, Python, Tableau, Power BI, Excel, R.
- Soft Skills: Data storytelling, problem-solving, collaboration, attention to detail.

4. Add Certifications

List date relevant courses that highlight your technical skills, such as:

- *Google Data Analytics Certificate*
- *Python for Everybody*
- *SQL for Data Science*

5. Showcase Projects

Highlight and showcase your skills through personal projects. Include portfolio work with brief descriptions under the “Project” section or link the platform where you host your personal projects.

As an example:

- *Developed a Power BI dashboard to visualize sales trends for a mock retail dataset, improving interpretability for business decisions.*
- *Analysed COVID-19 data using Python, identifying patterns and predicting case trends*

Step 2: Finding Influencers and Leaders in Data Analytics

Networking with industry leaders helps you stay updated with trends and gain visibility in the data community. Here are the steps you can follow now to network with confidence.

1. Identify Influential Voices

Search for hashtags like #DataAnalytics, #DataScience, or #BusinessIntelligence on LinkedIn.

Here are the influencers I’ve followed and learnt through engagement:

- Injae Park – Power BI expert, Youtuber @ Power BI Park.
- Rick de Groot – Business Intelligence expert, Creator of Gorilla.BI blog
- Cassie Kozyrkov – Chief Decision Scientist at Google.

2. Leverage Thought Leaders’ Content

You can also create your own content by leveraging their content. This is best done through genuine engagement and personal experiences that you resonate with the leaders.

Here's how you can share your thoughts and influence others:

- Engage with their posts by liking, commenting, and sharing.
- Reflect on their ideas in your own posts to showcase thought alignment.
- Even if you don't agree with their thoughts, respect their experience and provide data & experience-driven response.
- Share value, not hype - what I think differentiates the industry leaders vs content influencers is the value that their content provides. I've always valued content that taught me about the industry or a key skill that I needed.

At the end of the day, controversial content may get you the instant attention, followers and impressions, but it may cost your reputation as a credible and valuable expert in the field who will become the next generation of industry leaders.

Step 3: Finding Data Community Groups

I found LinkedIn groups and other platforms are great for building connections and learning. Here's how you can find them:

1. Join LinkedIn Groups

Examples:

- Data Science Central
- Power BI Developers Group for enthusiasts
- SQL for Beginners and Experts

2. Explore Other Communities

- Kaggle: Compete in data challenges and share projects.
- Reddit: Join subreddits like r/datascience or r/SQL.
- Slack Communities: Search for data-focused Slack groups such as DataTalks.Club.

Step 4: Building Your Personal Brand

Your LinkedIn activity reflects your expertise. Building your personal brand means - if you were to think of yourself as a company or a product, how would others perceive you (or want them to)? Your voice and creativity in how you express yourself as an expert in the field can be packaged up into a personal brand.

For example, if your interest is in SQL, what is your specialty with SQL coding that makes you different from other SQL coders out there? Or, let's say your interest is in design. How is your dashboard design different to other dashboards?

LinkedIn is a great platform to showcase your skills and craft your career into a story that speaks more than just your technical skills. This is the platform where many recruiters and hiring managers will check to see you as *you*. At the end of the day, as much as you want to land the perfect role, the environment and the people that you work with should also align and want you, for *you*.

In my personal experience of landing the roles I want and even creating roles that had never existed in a large organisation, I attribute to my personal branding because when they see my work, they know who did it. Here's how to stand out by creating your own personal brand:

1. Create an identity.

This includes:

- Your tone in the way you express yourself on the platform,
- Your area of interest within data and this could be the field of interest or specific data analytics tool that you love
- Understanding what drives you to be in data analytics and what problems you want to solve in the industry
- Knowing your value and what you can offer.

2. Develop a Content Strategy

Once you have created an identity/brand for your LinkedIn presence, here are 4 different types of Posts to share:

1. Educational Content:

- "Here's how I used Python and Pandas to clean a messy dataset. Step-by-step tutorial below!"

2. Case Studies:

- Share your project experience, e.g., "I analyzed customer purchase patterns using SQL. Here's what I learned."

3. Insights from Courses:

- "I just completed the Google Data Analytics Certificate. Here's what I found most valuable."

4. Industry Trends:

- "Machine learning is transforming healthcare. Here's how data professionals can contribute."

3. Step-by-Step Posting Strategy

1. Post Once a Week:

Write short, insightful posts with a clear message or actionable advice.

2. Engage Regularly:

- Comment on posts from influencers.
- Answer questions in LinkedIn groups.

3. Write Articles:

Use LinkedIn's blogging platform to write long-form content, such as:

- "5 Ways Scientists Can Excel in Data Analytics"
- "From Lab to Dashboard: How to Tell Stories with Data"

4. Build Credibility

Share screenshots of dashboards or code snippets you've created. Not only this demonstrates your hands-on skills, you are guiding those who are new to the field. You'd never know who may stumble upon your post - whether it be a recruiter, your next mentor, your future student, or someone famous.

Step 5: Using ChatGPT for LinkedIn Posts

ChatGPT can simplify the process of content creation. Here's how you can use ChatGPT or other Gen AI models to create your LinkedIn posts:

Prompt:

"Write a LinkedIn post for an data analyst about how SQL is like finding patterns in biology experiments."

Then tailor ChatGPT's output to add personal touches and make it relatable to your audience.

Step 6: Showcase Leadership

Once you've built a portfolio of posts and projects:

1. Host webinars or record podcasts on data trends.
2. Share insights from projects or industry news.
3. Create a free downloadable resource (e.g., a SQL cheat sheet) to share with your network.

Key Takeaways

- Your LinkedIn profile is your personal brand in the data world.
- Find and engage with leaders to build your presence.
- Use content to position yourself as a future data expert.

In the next step, we'll discuss how to craft *the* CV and cover letter that highlight your transferable skills and capture recruiters' attention.

STEP 6

Gaining Hands-On Experience

“Doing something wrong is always better than thinking a million right thoughts.”

It's completely okay if you're still asking yourself, *how do you know if Data is the right career path for me?*

Breaking into data analytics isn't just about learning theories or completing certifications - practical experience is where the real transformation happens. In this step, we'll explore actionable ways to gain hands-on experience, including internships, networking, and entry-level roles, with specific examples and strategies tailored for scientists like us.

Why Hands-On Experience Matters

Practical experience bridges the gap between what you learn in courses and the reality of applying those skills in a professional setting. Think of it as the difference between reading about a chemical reaction vs conducting the experiment yourself. The hands-on work solidifies your understanding, sharpens your problem-solving abilities, and makes you more marketable to employers.

How to Secure Internships and Projects

1. Leverage University Resources

If you're still in academia or have connections to it, university resources can be a goldmine. Many universities have dedicated career centers.

2. Reaching Out to Professors / Research Groups

Professors often have research projects that require data analysis. By reaching out, you can secure opportunities to assist in data cleaning, visualisation, or statistical analysis.

Here is an Email Template you can use (which I have personally used myself when starting out and received responses):

Subject: Opportunity to Assist with Research Projects

Dear [Professor's Name],

My name is [Your Name], and I am a [recent graduate/current student] with a strong interest in data analytics. I've been following your research on [specific topic], and I am deeply impressed by [specific aspect of their work].

I would love the opportunity to contribute to your research

by assisting with data analysis or any other relevant tasks. This would be a fantastic learning experience for me while adding value to your ongoing work.

Thank you for considering my request, and I look forward to hearing from you.

3. Online Job Platforms

Job boards such as SEEK, Indeed, and GradConnection (if you're based in Australasia) frequently list data analytics internships. Search for "data analyst intern" to find opportunities with companies looking for new talent.

Example Search Strategy:

- Go to online job platforms and search for "Data Analytics Internship."
- Filter by location
- Use keywords like "entry-level data roles," "junior data analyst," or "internship."

Networking: Your Secret Weapon

Networking is essential in data analytics, opening doors to mentorship, job referrals, and insider knowledge. Here's a couple of ways I've connected with people with similar career stories and interests in the field:

1. Attend Data Meetups (in person)

There is nothing more valuable than randomly running into a person at a meeting up who share the same career story as you or who shares the same interest in the field who you can learn from.

I've used platforms like Meetup or LinkedIn to find meet up groups and events and they were typically hosted outside of work hours so it worked with my daily schedule.

2. Engage with Online Communities

Meet ups in person may not suit everyone due to your lifestyle, personality or just the logistics of getting to an organised meet up event so there are way more opportunities to network through online communities.

I've used platforms like LinkedIn, Kaggle, or even Reddit (forums like r/datascience and r/analytics) for advice and career tips. You'd be surprised how helpful and supportive a total stranger could be. Sometimes, all we need to do is to ask the right questions.

Networking Tip:

When attending events, prepare a concise introduction that highlights your scientific background and data analytics aspirations. Craft and tell your unique story. Trust me, everyone loves a story with a unique perspective, especially if you've had a different career path.

Here's an example:

"Hi, I'm [Name], a materials chemist transitioning into data analytics."

You might be wondering, what the heck is a chemist doing in data analytics?

Well, I thought that too, until I figured out that the thought process in analysing and presenting the data I collected from the experiments could be applied to solving problems in other fields.

What I particularly enjoy is using Excel or Power BI to create visuals that tell a story and summarising tons of data into a summary that makes sense to the people who has interest in the data."

Entry-Level Positions: A Step Back for a Leap Forward

Sometimes, starting in an entry-level role or even taking a pay cut can be the most strategic move for your long-term career.

Why It's Worth It

- *Skill Application:* Entry-level roles provide the opportunity to apply what you've learned in a structured environment.
- *Learning the Ropes:* Gain insight into how data analytics teams operate, from stakeholder communication to tool usage.
- *Building a Portfolio:* Use your work on real projects to create a portfolio that showcases your abilities to future employers.

Examples of Entry-Level Positions:

- Junior Data Analyst
- Data Coordinator
- Reporting Assistant
- Data Entry Specialist

Contract Roles

Contract roles can offer flexibility and expose you to diverse industries. For example, a 6-month data analyst contract with a retail company might involve building dashboards in Power BI - a valuable skill for your portfolio.

Hands-On Experience Through Personal Projects

If internships or entry-level roles aren't immediately available, start your own project. Starting my own project was the most rewarding experience I had although it was the most difficult - simply because I didn't know where to start!

I've noted down some project ideas for you so you don't have to suffer like I did.

Project Ideas:

1. Analyse Public Data: Use publicly available datasets (e.g., government statistics, Kaggle) to identify trends or solve problems.
2. Create Dashboards: Build a Power BI dashboard for a local charity or small business.
3. Hackathons: Participate in data hackathons to work on real-world challenges in a team setting.

Example:

A biologist could use the Department of Conservation data to analyse endangered species trends and present insights through visualisations.

Conclusion: Build the Bridge towards your Data Career

Hands-on experience is the bridge between learning and employment. By engaging in internships, networking, and personal projects, you'll gain the confidence and skills needed to excel in data analytics.

In the next chapter, we'll focus on crafting a standout CV and cover letter to showcase your newfound expertise and land the job you've been preparing for.

STEP 7

Navigating Job Search Strategies & Interviews

“No one will remember the facts but they will remember a story.”

Finding and securing a data analytics role is a process that requires preparation, persistence, and strategy. It's not just about showcasing your technical skills; it's about demonstrating your ability to solve problems, communicate insights, and add value to an organisation or a customer.

In this chapter, we'll delve deeper into strategic job searches and acing interviews, and ensuring the job is the *right fit* for you.

Job Search Strategies That Work in 2025

The job market for data professionals is competitive, but understanding where to search and how to stand out can give you an edge.

Best Platforms for Finding Jobs

LinkedIn:

- Use advanced filters to find relevant jobs.
- Follow companies & Top Voices that resonate with you and engage with their posts.

Job Search Sites (i.e. SEEK, Glassdoor):

- Search using specific terms like “Junior Data Analyst”, “Entry-Level Data Scientist”, “Data Analyst Contractor”, “Reporting Analyst”, “Reporting Specialist”.

Recruitment Agencies:

- Reach out to Agencies that specialise in tech roles.

Company Career Pages:

- Many companies post job openings directly on their websites so actively monitor for new jobs daily.

THE KEY: Look at what skills each job is requiring

Every job posting contains clues about what the employer values or what skills are hot in the field. Use those clues to hone in on new technical skills and tailor your resume to each role:

- Look at the job description’s keywords and include them in your resume.
- Highlight transferable skills, such as problem-solving, critical thinking, and data visualisation, that align with the job.



Interviews: Crafting Your Career Path as a Story

If you've ever found yourself staring at a blank resume template, wondering how in the world to explain your career journey from scientist to aspiring data analyst, you're not alone.

For many scientists, the idea of pivoting into a new field feels like abandoning years of hard-earned experience. But here's a mindset shift that changed everything for me: you're not starting over - you're building forward. And the most powerful way to do that is through storytelling.

People don't remember long lists of qualifications or buzzwords. They remember stories. Stories connect. They reveal your personality, your purpose, and your potential. When you craft your career as a story, you give others a reason to believe in your journey - and you give yourself permission to own it.

Why Storytelling Works

Storytelling is deeply human. Since ancient times, we've passed on knowledge through stories - about the stars, about life, about who we are. So, when you're explaining your career shift, you're not just listing past job titles. You're taking someone on a journey: who you were, who you are now, and who you're becoming.

A well-crafted story helps potential employers, recruiters, and even peers see the thread that connects your scientific past to your data-driven future. And more importantly, it helps you see it too.

The Building Blocks of Your Personal Narrative

Let's break down how you can frame your career path as a story:

- **The Hypothesis:** What drove you initially? What were you curious about?
- **The Experiment:** What experiences helped you learn, grow, and shift perspectives?
- **The Data:** What skills, insights, and tools did you gain?
- **The Conclusion:** Where are you now, and what's the next chapter?

A Real Example: My Story

When I began interviewing for data roles, I wasn't sure how to "sell" my background in science. I wasn't coming from a traditional data analytics background at all - I have a Ph.D. in chemistry and that's all I had (I had once thought). I had worked in labs and led scientific teams, but now, how the heck do I break into data analytics?

I had to dig deep and ask myself: is that all that I am, just a scientist? surely not...

Well, here's a story I told for an actual data analytics role in a bank:

"Growing up I've always been a curious person. It's the curiosity that led me to study chemistry in my undergrad. I studied the building blocks of life because I was fascinated by how the smallest components create the world around us. An what Ph.D. gave me was not just a fancy degree, but the right tools and the thought process of solving a very complex problem.

But once I understood those building blocks, I became more curious about systems - how they're organised and how

they function. And I really wanted to apply the scientific thinking to real life problems, outside of academia.

That curiosity naturally led me into operations management, where I learnt how labs and organisations worked. It was there that I discovered the true purpose of data.

For example, in this operational management role, I needed to understand operational costs, space allocation, and tenant onboarding. So I started using Excel and Power BI, tools that I used in my Ph.D., to track and visualise this data. But this time, I was presenting my findings to executives and stakeholders, not to a science community.

That's when it clicked - my scientific mindset, my operational experience, and my analytical skills had all come together. I was already doing data analytics and all I have to do is to communicate this finding to an audience that had a stake in it. I realised I just hadn't called it that yet."

When I shared this story to the hiring managers, I saw nods. I saw smiles. Because it wasn't just a résumé. It was me and everyone understood my journey of how I got here. So here's how you can do the same.

Here's a **simple formula** to writing your career story:

1. Start with Curiosity

What drew you to science in the first place? Was it a desire to explore the natural world?

Example: "I've always loved patterns. Whether in nature or numbers, I was drawn to understanding how things fit together."

2. Describe Your Evolution

What experiences expanded your perspective? When did you begin seeing the broader applications of your work?

Example: "In the lab, I enjoyed experiments but I was also fascinated by the systems supporting those experiments. I began managing projects, coordinating budgets, and improving workflows."

3. Pinpoint the Shift

When did data become central to your work? What tools did you start using? How did your thinking evolve?

Example: "I realised I was constantly relying on data, whether I'm gathering quantitative data for my thesis to optimising lab usage. I started learning Excel deeply, then moved on to Power BI and SQL."

4. Connect to Your Goal

Why do you want to move into data now? What excites you about this field?

Example: "I want to work in data analytics because it brings my love for analytics and trends with practical impact. I want to use data to solve real-world problems - just like I did in science, but for organisations that provide value to people."

How This Helps You Stand Out

In today's job market, employers aren't just hiring skills. They're hiring people. As I've sat in the interview panel in numerous job interviews, the candidates that stood out were the ones who knew clearly *why* they were here and how this new role is a key stepping stone for their next step.

When you tell your story:

- You become memorable.
- You appear self-aware and intentional.
- You frame your past as valuable and relevant, rather than unrelated.

To be quite honest with you, scientists, by nature, are storytellers. Every research paper tells a story - of discovery, of data, of meaning. Now, it's time to tell yours.

Final Thought

Crafting your career story isn't about writing a fictional narrative. It's about recognising the truth that's been there all along - you've been building toward this new role through everything you've done.

Your scientific background gave you the analytical rigor. The part time job, the intern you took, the odd job you had growing up - they all add up to making you who you are. And now growing interest in data? That's your next chapter.

Don't hide your past - weave it into your future.

And if you're still unsure how to pull it all together, I'm here to help. I've been in your shoes, and I know how powerful it is to finally see your story clearly. Feel free to reach out at hello@paulbaek.com

BONUS STEP 8

How to Talk to Your Parents and Friends After Launching into Your Data Career

“Relationship isn’t defined by how long you’ve known the person. It’s about who’s walked into your life & accepted you for who you are.”

Changing careers is a big step, but sometimes the hardest part isn’t learning new skills or applying for jobs - it’s dealing with the expectations of those closest to you.

Family and friends often mean well, but they may not fully understand your decision, and their concerns can feel like yet another hurdle.

This chapter is about how to have those conversations in a way that keeps relationships strong, reassures your loved ones, and helps you build their support as you take this next step.

And truthfully, everything that I uncover in this chapter is what I’ve personally faced while changing careers.

Why your career change might raise concerns

For a lot of people, a career is more than just a job. It's part of their identity, a source of stability, and the result of years of study and hard work. When you decide to take a different path, it can make others feel unsettled or even anxious for you.

Your family or friends might be worried about money, especially if the new field doesn't feel "safe" to them yet. They might see your change as throwing away your hard-earned expertise. If they don't understand what a data career involves, they might not see its potential. And if you're speaking to older relatives, they might have grown up in a time when job stability was valued above all else, making them less comfortable with change.

It's important to recognise these worries, even if you don't share them. Understanding their point of view will help you approach the conversation with empathy rather than frustration.

Preparing for conversations with loved ones

Before you talk to anyone, make sure you're clear on why you're making this change and how you plan to get there. If you can confidently explain your motivations, you'll be in a better position to address concerns without getting flustered.

First, think about your "why". Are you looking for better opportunities, more work-life balance, or the chance to follow a passion? For example, you might say, "I'm moving into data analytics because I love finding insights in data, and it's a field that offers strong growth and creative opportunities."

Second, have a plan. People are far more likely to trust your decision if they can see you've thought things through. Outline the courses you're taking, the people you're connecting with, and any steps you've already taken. Show how your existing skills, whether that's analysing lab results, managing a team, or creating systems - align perfectly with data analytics skills.

Lastly, be ready for their questions. Anticipate the common worries so you can respond calmly instead of defensively.

Here are some **examples**:

If you're speaking with parents or older relatives, they might say, "Why leave your field? You've spent so many years studying and working in it!" You could reply, "I understand it seems sudden, but my background in science actually gives me a strong foundation for data analytics. I'm already skilled at analysing complex information and solving problems, so I'm building on what I know - not starting from scratch."

If they worry about you finding a job, you could say, "I've researched this field thoroughly. It's growing quickly, and there's strong demand for people with these skills. I've already started training and networking with industry professionals to make sure I succeed."

When a close friend says, "Are you sure about this? You were doing so well," you might reply, "I know it seems like a big leap, but I've realised data analytics is where my future lies. I can still use my science skills, but in a new way that allows me to solve different types of problems and keep growing."

If a partner asks, "How will this affect us financially?" you might say, "I've budgeted for this transition, and I'm taking affordable courses to upskill. This isn't a gamble - it's a calculated investment in a better future for both of us."

Reassuring through actions

Words help, but actions speak louder. Show your progress by sharing the projects you've worked on, such as a Power BI dashboard you've built to visualise climate data. Involve them in your journey by asking for feedback on your CV or LinkedIn profile - it shows you value their opinion. Demonstrate stability by explaining that you'll keep your current job until you've secured your first data role.

When they still don't understand

Sometimes, no matter what you say, some people will still doubt your decision. That's when you need to stay focused on your goal and set boundaries. If someone criticises your decision repeatedly, you can say, "I appreciate your concern, but I've thought carefully about this. I'd really like your support moving forward."

Building a support system

Surround yourself with people who believe in you. Join LinkedIn groups, attend local meetups, or find a mentor who's already working in data analytics. These connections will not only offer encouragement but may open doors to opportunities.

Leading by example

Your career change isn't just about you - it can inspire others. When your loved ones see you thriving in your new role, they'll understand the value of taking a risk for something you believe in. Show them through your actions that this isn't a blind leap but a thoughtful step towards a better future. In the end, a career change is a transformation. It's not a sign of failure but an act of courage - proof that you're willing to grow beyond the limits you once thought defined you. By preparing well, communicating clearly, and surrounding yourself with support, you can navigate these conversations with confidence and move forward into a future that excites you.

CONCLUDING MOTIVATIONAL REMARKS

"The only way to make sense out of change is to plunge into it, move with it, and join the dance." - Alan Watts

As we come to the final chapter of this book, let's pause and reflect on the journey you've just walked through. You've been given a map - each chapter a step forward, guiding you to a new destination. But this isn't just about a career change. It's about a transformation. It's about realising that change is not an admission of failure but an act of courage, a declaration that you are ready to grow beyond the limits you once thought defined you.

Now you would've learnt how to:

- Understand the data analytics landscape, uncovering roles and skills that align with your scientific mind.
- Choose the right path by assessing your strengths and envisioning your future.
- Learn the foundations, upskilling yourself with tools and knowledge through accessible courses.
- Build a LinkedIn profile, not just as a CV but as a way to connect with others in the field.
- Bridge the gap between your past and your future, reframing your existing skills as the foundation for a data career.

- Gain hands-on experience, taking small but meaningful steps to build confidence and credibility.
- Navigate job search strategies, preparing yourself for the real-world challenges of CVs, applications, and interviews, as well as managing the expectations of friends and family while stepping into a new career.

And now, here we are – at the intersection of reflection and action.

Change is a beginning, not an end

In your current career, you may feel you've reached a plateau. The thought of stepping away from it can feel like leaving behind a part of yourself, an identity you've worked hard to build. I know that feeling - I've been there. But here's **the truth**: what you're leaving behind is *not who you are*, but merely one chapter of your story.

Change is not an *ending*. It is the beginning of something *new*. Just like the scientist who experiments with a hypothesis, stepping into the unknown is part of discovery. The career you're embarking on is not separate from the one you've had - it's a continuation. The skills you've developed, the challenges you've overcome, the way you think and problem-solve - all of these are tools you'll carry with you.

Only the brave take the step

The unknown is daunting for a reason. It's not predictable. It's not comfortable. And yet, it's where the most profound growth happens. Change requires bravery, the kind that comes from trusting yourself, even when you're not sure of the outcome.

You are already brave for even considering this path. The act of imagining a new future for yourself is, in itself, a spark of

courage. Now it's time to take that spark and turn it into a flame. Not just for yourself, but for others. When you take this step, when you choose to embrace change, you become an example of what's possible. *You* light the way for those around you who may be yearning for something new but are too afraid to try.

Find your light, lead the way

Deep within you, there's a light. It's the same light that carried you through your scientific studies, that drew you to problem-solving, discovery, and innovation. That light is still there. It always will be. And it will guide you as you step into the world of data analytics.

But your light doesn't just shine for you. It has the power to inspire those around you. By taking the leap into a new career, you show others that it's okay to change. It's okay to dream bigger. It's okay to outgrow what no longer serves you.

This journey isn't only about transforming yourself - it's about showing others what transformation can look like, so they too can find their courage.

Your Story Is Just Beginning

As you finish this book, I hope you feel empowered. I hope you feel ready to take that first step, knowing that change is not a rejection of your past but a bold embrace of your future. You have everything you need to succeed - the knowledge, the drive, the curiosity, and most importantly, the light within you.

It's not about offering answers - it's about walking this path together, helping you find clarity and confidence in your next step.

Remember, the only question that remains is this: *What will you do with what you already have and who you are today?*

Go forward with courage. Shine brightly. Your transformation will not only change your life - it will inspire others to change theirs too.

This is just the beginning of your story, and I can't wait to see the light you bring into the world. The future is yours to shape.

If you ever feel stuck or need someone to talk to who truly understands what it feels like to take this leap, I'd love to help. Whether you're struggling with a plan, facing doubts, or just need a guiding hand, know that you're not alone. You can always reach out to me at hello@paulbaek.com.

