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The 4-Step Guide to Becoming a Data Analyst in the Age of AI

Learn the basics. Practise. Show your work. Apply.

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ABOUT THE AUTHOR

Maryam Idris

Maryam Idris works in data and AI. She is the founder of Quiet Systems, which builds AI automation for small business owners in Africa, and of Data Habitat, a data consultancy for housing. She holds current Microsoft certifications.

She started her career in accounting and moved into data analysis and business intelligence. She has five years of hands-on experience, and holds a BSc in AI and Data Science.

She moved into tech without a straight path, and she remembers how hard that was. That is why she still mentors and teaches women and others who are breaking into data.

She writes and builds from inside the mess, not from a mountaintop. Everything in this guide is something she has used or would tell a friend.

Her view: AI makes the basics faster. It makes understanding the data matter more.

INTRODUCTION

Start here

Welcome. Whether you're curious about data, changing careers or working in another field and wondering about analytics, this guide gives you a clear path.

Data analysis is used in tech, health, finance, housing, charities and almost every other field. The work is to take messy information, find what matters, and explain it so someone can make a decision.

The 4 steps

1. **Learn the basics:** Excel, SQL and Power BI, plus how to clean data and read simple statistics.
2. **Practise:** use real, public data to answer real questions.
3. **Show your work:** build a portfolio that explains your thinking.
4. **Apply:** tailor your applications and prepare for interviews.

What has changed with AI

AI tools can now explain code, write a first draft of a formula or query, and tidy up your notes. That is useful, and it changes how you learn.

But AI does not know your data, can be confidently wrong, and cannot be accountable for a decision. An employer still needs a person who understands the question, checks the answer, and explains it clearly.

> **The rule for this guide:** use AI to learn faster, not to skip learning. Try first. Ask it to explain, not just to answer. Check what it gives you.

Consistency matters more than speed. Three short sessions a week will take you further than one long one.

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STEP ONE

Learn the basics

These are the foundations. Everything else builds on them.

Excel

Still the tool most workplaces use every day. Learn formulas, PivotTables, charts and a lookup function. XLOOKUP is the newer one in current versions of Excel. VLOOKUP still works and still appears in older workbooks, so know both. Learn Power Query for cleaning data.

Free: Excel Easy, and Microsoft's own Excel training.

SQL

The language for asking questions of a database. Start with SELECT, WHERE, ORDER BY, GROUP BY and JOIN. Practise every day for a short time.

Free: SQL Zoo and W3Schools interactive tutorials.

Power BI

A tool for building dashboards that fits the Microsoft tools many companies already use. Power BI Desktop is free to download. Learn how to load data, build a simple model, and make clear charts. DAX, its formula language, comes after that.

Free: Microsoft Learn training modules.

Cleaning data and basic statistics

Real data is messy. Learn to spot duplicates, blanks and odd values. Learn averages, the median, spread, and the difference between a pattern and a cause. These matter more than any tool.

Where data lives

Learn the idea of cloud storage: tables, permissions, backups and keeping data secure. Start with the basics of Microsoft Azure and Microsoft Fabric, or Google Cloud, and don't worry about the details yet.

Free: Microsoft Learn.

STEP ONE, CONTINUED

Learn with AI, the right way

AI is a patient tutor. Used well, it helps you learn faster. Used badly, it helps you avoid learning.

Prompts that work

> *"Explain this SQL query line by line, as if I'm a beginner: [paste your query]."*
>
> *"Give me five practice questions on JOINs. Don't show the answers until I ask."*
>
> *"My formula should add up sales by month, but the result looks wrong. Here is the formula and what I expected: [paste]. What could be going wrong?"*
>
> *"Explain the difference between the mean and the median with a simple example."*

Habits

- **Try first.** Spend ten minutes on it yourself, then ask.
- **Ask for the reasoning,** not only the answer.
- **Check the result** on a small sample you can work out by hand.
- **Keep a short log** of what you asked and what you changed. You will use it in your portfolio.

Keep real data out of it

Don't paste real customer, client or employer data into an AI tool. Use made-up sample rows or describe the problem. My free **Safe AI Guide** shows what to put in and what to leave out.

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STEP TWO

Practise what you learn

Knowing a tool and using it on real data are different skills. Practice is where the gap closes.

1. Start with a question

Pick a topic you care about, such as sales, health, housing, sport or education. Write one question you want to answer. A clear question is half the project.

2. Find public data

Kaggle, Google Dataset Search, and government and national statistics open-data portals all offer free datasets. Pick one that matches your question.

3. Build three small projects

- **Excel:** clean a messy dataset and summarise it with a PivotTable.
- **SQL:** answer five questions from a database using JOINs and GROUP BY.
- **Power BI:** build a one-page dashboard that answers your question.

4. Write down every step

- The question and why it matters
- How you cleaned and changed the data, and why
- The tools and methods you used
- What went wrong and how you fixed it
- **New:** where you used AI, what you asked, and how you checked it

Dashboard tip: one question per page, plain titles, and a sentence at the top saying what the reader should notice.

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STEP THREE

Show your work

A portfolio shows an employer how you think. It is often more convincing than a list of courses.

Build a portfolio

Put your projects on GitHub or a simple personal website. For each project include the data source, your queries or workbook, and the final dashboard or charts, as far as the data licence allows.

Write a short case study for each project

- **The problem:** what you wanted to find out
- **The data:** where it came from and its limits
- **The method:** what you did, in plain words
- **The result:** what you found, and what it means
- **Next:** what you would do with more time

Be honest about AI

Say where you used AI and how you checked its work. It shows judgement, and employers value that more than pretending you did everything by hand.

Get seen

- Share one project at a time on LinkedIn. Say what you found and one thing that surprised you.
- Connect with analysts and recruiters, and comment thoughtfully on their posts.
- Ask a mentor or peer for feedback. It shows you can learn and improve.

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STEP FOUR

Apply for jobs

You now have skills, projects and a portfolio. This step is about putting them in front of the right people.

Tailor your CV

- Match the tools and skills in the job description, using your own words and only things you can do.
- Lead with the projects most relevant to the role, and link to your portfolio.
- Use real numbers from your work, for example: "Cut weekly report time from `[X]` to `[Y]` by automating the cleaning steps." Never invent a figure.
- AI can help you tidy wording. Read every line, and make sure it still sounds like you.

Look at related job titles

Roles go by different names: data analyst, reporting analyst, business intelligence analyst, insight analyst. Search all of them. Entry-level roles are competitive, so apply widely and keep building while you wait.

Network with intent

Join online communities, events and webinars. Ask good questions. Follow up with a short, friendly message.

Prepare for interviews

- **Technical:** SQL questions, Excel or Power BI tasks, and data cleaning.
- **Behavioural:** teamwork, deadlines and how you solve problems.
- **Your projects:** what problem did you solve, how, and what was the result?
- **AI:** "How do you use AI in your work, and how do you check what it gives you?" Have an honest answer ready.

WORKING WITH AI

What AI does, and what stays with you

As an analyst you will use AI every week. These rules keep you safe and keep you valuable.

AI is good for

- Explaining code and formulas
- First drafts of queries and formulas
- Spotting errors in your logic
- Summarising your findings in plain words
- Brainstorming questions to ask the data

AI is not good for

- Knowing your data and your business
- Being right every time
- Deciding what matters
- Taking responsibility for a decision
- Keeping private data private

What stays with you

- Asking the right question
- Checking that the numbers make sense
- Knowing what is fair and private
- Explaining the result so people can act on it

Three rules

1. **Check everything.** Test AI output on a small sample you can verify by hand.
2. **Protect data.** Never paste personal, client or employer data into an AI tool. Use made-up examples.
3. **Be open.** Say where you used AI. If your employer has an AI policy, follow it.

WHAT'S NEXT

Keep going

- **Stay consistent.** Three short sessions a week beats one long one.
- **Add Python and statistics** once you are comfortable with Excel, SQL and Power BI.
- **Pick a field** such as housing, health, finance or education, and learn how data is used there.
- **Consider a certification** such as Microsoft's Power BI Data Analyst Associate (PL-300). Check Microsoft Learn for the current exam details.
- **Find a mentor or a peer group** to share projects and get feedback.

Every expert was once a beginner. Start small, stay consistent, and keep your own thinking in the work.

Stay in touch

I share what I'm learning and building on Instagram at **@iam_maryamidris**, and in my newsletter at **maryamidris.com**.

For my other free guides, including **The Safe AI Guide** and **The AI Toolkit**, visit maryamidris.com.

I also teach free workshops. Dates are announced at maryamidris.com and on Instagram, and you are welcome to join one.

This guide is general information, not professional or career advice. Tools, courses and exams change, so check each provider's current details.

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