



For

Data and AI roles

# Four data and AI roles. *Pick the right one.*

What each role does all day, and which one to start with.

Made with engineers who **work at Google and Microsoft** and **teach at NYC.**





Before you take advice, you should know who it comes from.

Made with engineers who work at Google and Microsoft *and teach at NYC.*



**Abhishek**

Engineering Analyst, Google

Earlier a senior data scientist at Optum. Teaches Data Science at NYC.



**Swapnil**

Forward Deployed Engineer, Microsoft

Works on Microsoft Teams. Teaches Full Stack Engineering at NYC.

They speak for themselves, not for their employers.



# Our students are already *training for these roles.*

Three tracks, one for each role, taught live by  
working engineers.



DATA  
ANALYTICS +  
GENAI

For the data analyst role

DATA  
SCIENCE &  
MACHINE  
LEARNING

For data scientist and ML roles

AI  
ENGINEERING

For the AI engineer role



# Students our team *has placed.*

From the team behind NYC, at Sheryians Coding School.

1,200+

students placed

38,000+

students taught, offline and online



**Rishika Jain**

Cisco

₹17 LPA



**Mansi Patel**

Airtel

₹15 LPA



**Anuj Parashar**

SDE, Care Health Insurance

₹22 LPA



**Kushagra Patidar**

SDE 1, Amazon

₹47 LPA



# Now, let's compare *the roles.*

Eight short sections. Read them in order.

- 01      **The 4 roles, side by side**
- 02      **A normal day in each role**
- 03      **What each role needs you to learn**
- 04      **Which role fits you**
- 05      **The fresher market in India**
- 06      **One project for each role**
- 07      **Switching roles later**
- 08      **7 mistakes when choosing a role**

# The 4 roles, *side by side.*

They sound alike. Day to day, they are not.



## Data analyst



## Data scientist



## ML engineer



## AI engineer

### WHAT THEY DO

Answers business questions with data.

Finds patterns and predicts what happens next.

Builds, trains and runs models in production.

Builds products on top of AI models.

### MAIN TOOLS

SQL

Statistics

Python

LLM APIs

Excel

Python

ML frameworks

Retrieval

Dashboards

Models

Deployment

Agents

Evaluation

### WORKS WITH

Sales, product and operations teams

Product and business teams

Engineering teams

Product and engineering teams

### WHAT THEY DELIVER

A report or dashboard someone acts on.

An analysis or model with results.

A model that serves real users.

An AI feature people use.

Titles vary by company. A "data scientist" at one company does analyst work at another. Read the job description, not just the title.

# A normal day *in each role.*



## MORNING



## AFTERNOON



### Data analyst

Turns questions into answers.

Pull last week's numbers with SQL.

Update the dashboard. Explain one change to the sales team.



### Data scientist

Finds patterns and makes predictions.

Check why a forecast missed.

Test a new feature in the model. Write up the result.



### ML engineer

Keeps models running.

A model got slower in production. Find out why.

Retrain it. Release the new version behind a test.



### AI engineer

Builds AI features people use.

Users say the assistant gives wrong answers. Read the logs.

Fix retrieval. Add two tests.

# What each role *needs you to learn.*



## Data analyst

SQL first

SQL: joins, group by, window functions

Excel or Google Sheets

One BI tool: Power BI or Tableau

Basic statistics

A/B tests



Explain numbers to non-technical people.



## Data scientist

Statistics first

Everything a data analyst knows, plus:

Probability

Statistical inference

Python: pandas, scikit-learn

Regression

Classification

Evaluation



Explain results honestly, including what did not work.



## ML engineer

Software first

Strong Python

Software basics

scikit-learn

PyTorch

Error analysis

Model evaluation

Serving models: APIs, Docker, monitoring

Data pipelines



## AI engineer

Products first

Python or JavaScript, plus a backend

LLM APIs: prompts, structured output, tool calls

Retrieval (RAG) and vector search

Evaluation: tests for AI outputs

Cost, speed and safety

# Which role *fits you?*

Pick by what you enjoy doing for hours, not by which title sounds best.

## ? What do you enjoy doing for hours?

I like explaining numbers to people. → Data analyst

Start here. It has the most fresher openings in India and the shortest path to a first job.

I like maths and asking "why". → Data scientist

Most people get there by starting as an analyst, then adding statistics and ML.

I like building systems that keep running. → ML engineer

You need solid software skills as well as ML.

I like building products people use. → AI engineer

The newest of the four. Startups and product teams are hiring for it now.

I am not sure yet. → SQL and Python first

Both are useful in all four roles, so nothing is wasted.

# The fresher market *in India.*



## MOST OPENINGS

Data analyst



## GROWING FAST

AI engineer



## FEWER FRESHER ROLES

Data scientist

ML engineer

### ■ Data analyst: most openings

These four kinds of company all hire fresher analysts.

Product companies

Startups

Analytics firms

Service companies

### ■ AI engineer: growing fast

Startups and product teams building AI features hire for it. There are fewer roles than for analysts, but the number is rising quickly.

### ■ Data scientist: fewer fresher roles

Many companies ask for a master's degree or 1–2 years of experience. Analyst first is the usual path.

### ■ ML engineer: fewer fresher roles

It usually needs strong software skills. Many start as software or data engineers and move across.

No numbers on this page on purpose: openings change every month. Search LinkedIn and Naukri for your city before you decide.

# One project *for each role.*

A project that matches the role beats ten certificates.



DATA ANALYST

## Retail sales dashboard

1

Find which products and cities grew, which fell, and why.

2

Use SQL for the numbers. Build a dashboard.

3

Record a 2-minute walkthrough.



DATA SCIENTIST

## Customer churn model

1

Predict which customers will leave.

2

Show the accuracy and the mistakes.

3

Say what the business should do about it.



ML ENGINEER

## Demand forecast as an API

1

Train a forecast.

2

Put it behind an API and deploy it.

3

Log where it goes wrong.



AI ENGINEER

## Document assistant

1

Upload PDFs and ask questions.

2

Get answers with sources.

3

Write five tests that prove it works.



**At NYC:** engineers review your projects. Data Analytics + GenAI includes a final case you defend.

# You can switch *roles later*.

Most people in these roles did not start in them.

## DATA ROUTE



**Data analyst**

Add statistics and machine learning.

**Most common in India**



**Data scientist**

Add software engineering, deployment and monitoring.



**ML engineer**

## AI ROUTE



**Software engineer**

Add LLM APIs, retrieval and evaluation.

**Most common today**



**AI engineer**

Build one AI product end to end. Be able to explain every part of it.



**Anyone**

# 7 mistakes students make *when choosing a role.*

✕ ~~1. Picking the fanciest title~~

✓ Choose by the work you enjoy. The title changes by company anyway.

✕ ~~2. Machine learning before SQL~~

✓ Every data role tests SQL. Learn it first.

✕ ~~3. Only Kaggle notebooks~~

✓ Interviewers want a real question and a clear answer, not a leaderboard score.

✕ ~~4. Ten certificates, zero projects~~

✓ One project you can explain beats every certificate.

✕ ~~5. Skipping statistics~~

✓ Analysts and data scientists get asked about averages, spread and A/B tests.

✕ ~~6. AI demos you cannot test~~

✓ If you cannot show it works on five questions, it is a demo, not a project.

✕ ~~7. Waiting until final year to choose~~

✓ Pick a direction in second year. SQL and Python are useful whichever way you go.

# We teach a track for each role, *live*.

● ● ● nyc · courses

Pick your track



WE TEACH THIS

## Three tracks, one per role

Live classes, projects reviewed by engineers, and an advisor to help you pick the right track.

- ✓ **Data analyst** → Data Analytics + GenAI
- ✓ **Data scientist, ML engineer** → Data Science & Machine Learning
- ✓ **AI engineer** → AI Engineering



Talk to an advisor

See the courses → [notyourcollege.com](https://notyourcollege.com)



Guide by the NYC team, 2026. Role descriptions are based on public job listings in India. NYC does not guarantee employment or selection.