



# Curriculum cheat sheet

Discover the data skills your team  
needs to be successful

Gain an overview of the different roles within  
your organization and the trainings you can  
recommend tailored to their data skill level



# Data roles overview

Use this page to compare common data roles. Determine which roles are applicable to your organization, then click the links to see which technologies and skills your staff need to learn.

## [Data consumers](#)

need the skills to be able to make data-driven decisions, or have an informed conversation with a data professional.

## [Business analysts](#)

are your bridge between using data to calculate things and applying the results to make money.

## [Data analysts](#)

are focused on crunching the numbers, and need to know how to display and present findings from your calculations.

## [Data scientists](#)

make discoveries, create insights from data and communicate these insights and discoveries to non-technical stakeholders.

## [Machine learning scientists](#)

help computers learn without being explicitly programmed so that you can make predictions from your data.

## [Statisticians](#)

provide the intellectual rigor behind your analyses, allowing you to avoid bad decisions from misunderstanding results.

## [Programmers](#)

automate your business processes using data, improving productivity by reducing the repetitive tasks your team has to perform.

## [Data engineers](#)

get the right data to the right people whenever they need it. They are responsible for collecting, cleaning, and cataloging data.

# Data consumers

Data consumers need the skills to be able to make data-driven decisions, or have an informed conversation with a data professional.



 SPREADSHEETS

 + a b l e a u  
S O F T W A R E

THEORY

 Power BI

## Commonly uses the following technology and tools

### Theory:

Non-coding data skills

### Spreadsheets:

Google Sheets, Excel

### Business Intelligence:

Tableau, Power BI

## ● DATA SKILLS: BEGINNER

- Understands what data scientists, machine learning scientists, and data engineers do.
- Knows which questions can (and can't) be answered with data.
- Interpret the results of data projects, including calculations and visualizations.

## ● DATA SKILLS: INTERMEDIATE

- Is able to calculate descriptive statistics.
- Can draw common data visualizations.
- Understands the business applications of data.

## ● DATA SKILLS: ADVANCED

- Has a strong grasp of the fundamentals of business intelligence

## Recommended data skills learning path(s)

**Data Literacy Fundamentals** →

🕒 14 hours    📖 4 Courses

# Business analysts

Business analysts are your bridge between using data to calculate things and applying the results to make money.



## Commonly uses the following technology and tools

### Spreadsheets:

Google Sheets, Excel

### Business Intelligence:

Tableau, Power BI

### SQL: PostgreSQL,

SQL Server, Oracle SQL

### ● DATA SKILLS: BEGINNER

- Is able to calculate descriptive statistics.
- Can draw common data visualizations.
- Understands the business applications of data.

### ● DATA SKILLS: INTERMEDIATE

- Has a deep knowledge of the business domain.
- Is able to report and communicate using data.

### ● DATA SKILLS: ADVANCED

- Can create dashboards.
- Organizes data to solve business questions.

## Recommended data skills learning path(s)

### Data Skills For Business →

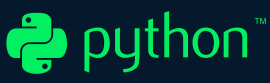
🕒 20 hours 📖 5 Courses

### Spreadsheets Fundamentals →

🕒 15 hours 📖 4 Courses

# Data analysts

Data analysts are focused on crunching the numbers, and need to know how to display and present findings from your calculations.



## Commonly uses the following technology and tools

**Programming languages:**  
Python, R

**Business Intelligence:**  
Tableau, Power BI

**Spreadsheets:**  
Google Sheets, Excel

**SQL:** PostgreSQL,  
SQL Server, Oracle SQL

### ● DATA SKILLS: BEGINNER

- Is able to calculate descriptive statistics.
- Can draw common data visualizations.
- Understands the business applications of data.

### ● DATA SKILLS: INTERMEDIATE

- Perform the data analysis workflows, including:
- Importing, manipulating, cleaning, calculating, and reporting on business data.
- Has a strong grasp of the fundamentals of business intelligence.

### ● DATA SKILLS: ADVANCED

- Can create dashboards.
- Organizes data to solve business questions.

## Recommended data skills learning path(s)

### Data Analyst with Python →

🕒 62 hours 📖 16 Courses

### Data Analyst with R →

🕒 77 hours 📖 19 Courses

### Data Analyst with SQL →

🕒 45 hours 📖 11 Courses

# Data scientists

Data scientists make discoveries, create insights from data and communicate these insights and discoveries to non-technical stakeholders.



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SQL

## Commonly uses the following technology and tools

### Programming languages:

Python, R

### SQL: PostgreSQL,

SQL Server, Oracle SQL

### Big data tools:

Airflow, Spark

### ● DATA SKILLS: BEGINNER

- Perform the data analysis workflows, including:
- Importing, manipulating, cleaning, calculating, and reporting on business data.
- Understands the business applications of data.

### ● DATA SKILLS: INTERMEDIATE

- Understands fundamental statistics, including distributions, modeling, and inference.
- Designing simple experiments such as A/B tests.
- Can create dashboards.

### ● DATA SKILLS: ADVANCED

- Applies analyses to business applications such as finance, marketing, and healthcare.
- Understands supervised and unsupervised machine learning workflows.
- Work with non-standard data types, such as time series, text, geospatial, and images.

## Recommended data skills learning path(s)

### Data Scientist with Python →

🕒 88 hours 📖 23 Courses

### Data Scientist with R →

🕒 76 hours 📖 19 Courses

# Machine learning scientists

Machine learning scientists help computers learn without being explicitly programmed so that you can make predictions from your data.



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SQL

## Commonly uses the following technology and tools

**Programming languages:**  
Python, R

**SQL:** PostgreSQL,  
SQL Server, Oracle SQL

### ● DATA SKILLS: BEGINNER

- Perform the data analysis workflows, including:
- Importing, manipulating, cleaning, calculating, and reporting on business data.
- Understands the business applications of data.

### ● DATA SKILLS: INTERMEDIATE

- Performing supervised and unsupervised machine learning workflows: feature engineering, training models, testing goodness of fit, making predictions.
- Applies analyses to business applications such as finance, marketing, and healthcare.

### ● DATA SKILLS: ADVANCED

- Perform deep learning workflows.
- Work with non-standard data types, such as time series, text, geospatial, and images.

## Recommended data skills learning path(s)

**Machine Learning Scientist  
with Python →**

🕒 93 hours 📖 23 Courses

**Machine Learning Scientist with R →**

🕒 61 hours 📖 15 Courses

# Statisticians

Statisticians provide the intellectual rigor behind your analyses, allowing you to avoid bad decisions from misunderstanding results.



## Commonly uses the following technology and tools

**Programming languages:**  
Python, R

**SQL:** PostgreSQL,  
SQL Server, Oracle SQL

**Big data tools:**  
Airflow, Spark

### ● DATA SKILLS: BEGINNER

- Perform the data analysis workflows, including:
- Importing, manipulating, cleaning, calculating, and reporting on business data.
- Understands the business applications of data.

### ● DATA SKILLS: INTERMEDIATE

- Perform statistical modeling workflows, including feature engineering, training
- models, testing goodness of fit, and inferring significance.
- Test hypotheses and design simple experiments such as A/B tests.

### ● DATA SKILLS: ADVANCED

- Design more complex experiments and understand Bayesian statistics.
- Understand specialist models, such as survival models, generalized additive models, mixture models, structural equation models.

## Recommended data skills learning path(s)

**Statistician with R** →

🕒 56 hours 📖 14 Courses



# Programmers

Programmers automate your business processes using data, improving productivity by reducing the repetitive tasks your team has to perform.



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Scala



Shell



git

## Commonly uses the following technology and tools

### Programming languages:

Python, R, Scala

### Command line tools:

Shell, Git

### ● DATA SKILLS: BEGINNER

- Write functions to avoid repetitive code.
- Benchmark and optimize code to improve performance.

### ● DATA SKILLS: INTERMEDIATE

- Test code.
- Work with web APIs.
- Develop packages for sharing code.

### ● DATA SKILLS: ADVANCED

- Develop data pipelines and work with parallel programming.
- Understanding programming paradigms, such as functional programming and object-oriented programming.

## Recommended data skills learning path(s)

### Python Programmer →

🕒 62 hours 📖 16 Courses

### R Programmer →

🕒 48 hours 📖 12 Courses

# Data engineers

Data engineers get the right data to the right people whenever they need it. They are responsible for collecting, cleaning, and cataloging data.



## Commonly uses the following technology and tools

<b>Programming languages:</b> Python, R, Scala	<b>Command line tools:</b> Shell, Git	<b>Workflow management:</b> Airflow	<b>Big data processing:</b> Spark, AWS Cloud
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### DATA SKILLS: BEGINNER

- Efficiently extract, transform, and load data.

### DATA SKILLS: INTERMEDIATE

- Process data and automate data flows using the command line.
- Process data in the cloud.

### DATA SKILLS: ADVANCED

- Manage and optimize SQL and NoSQL databases.
- Process big datasets.

## Recommended data skills learning path(s)

**Data Engineer with Python** →

🕒 95 hours 📖 25 Courses

**SQL for Database Engineers** →

🕒 16 hours 📖 4 Courses

**SQL Server for Database Admins** →

🕒 28 hours 📖 7 Courses

