

Harnessing the power & potential of data

2022 data science learning opportunities

Learn about key data and analytics challenges and opportunities sparked by the COVID-19 pandemic, and what pathways and skills can help you build or bolster your career.



The pandemic pushed data further into the spotlight — and it's going to stay there.

The demand for data science skills and data-driven decision making has been rapidly accelerating for years. Now, organizations across industries are putting professionals to the test to understand and respond to the drastic shift in business operations and consumer behavior caused by the COVID-19 pandemic. In a world that's constantly changing, it's normal to feel like you don't have control over what happens next. One thing you can control? Your education. With modular, flexible learning opportunities on edX, it's easy to gain the tangible skills and knowledge you need on your own time and at your own pace.

Whether you want to arm employees with valuable analytics skills that can be applied to a range of job functions, create data science upskilling and reskilling pathways in key functions, or offer opportunities to pursue advanced degrees, there's a path through edX. Use this guide to:

- **Get informed:** Discover the key challenges and opportunities that today's unusual economic landscape presents.
- **Get inspired:** See how industry professionals have used data science and analytics courses and programs on edX to achieve their career goals.
- **Get going:** Identify the skills, courses, and programs that will set you apart and up for success.

Across industries and functions, demand for data science and analytics skills will continue to rise.

Analytics and data science have become “essential navigational tools” as businesses respond to the uncharted waters of a pandemic-disrupted economy and prepare for the future, according to a [McKinsey article](#). As an increasing range of professionals are leveraging data skills to ask questions and explore problems, the types of job functions and industries that use data will only continue to grow.

Source: [Burning Glass Technologies](#)

In 2018 alone, more than 1.7 million job postings asked for data science skills. In addition to the increase in job titles like data scientist, data engineer, and big data architect, other disciplines are seeing high demand. For example, one in eight marketing jobs now demand data skills.

Opportunities for impact

There’s a renewed, critical need to untangle, rework, and leverage data to understand new business challenges and find paths forward.

Over the past decade, the availability of data and demand for analytics and data science skills has skyrocketed. In the sudden, unpredictable market sparked by the pandemic, the data and models companies relied on to inform strategy and decision making have been turned upside down. From the race to invest in real-time visualization and reporting capabilities to weather today’s storm to continued focus on building resilient, data-driven organizations, the spotlight on the power and potential of data science and analysis skills has never been brighter.

The combinations of soft “power” skills and domain knowledge with data skills result in more job security and growth opportunities.

According to an MIT Sloan Management Review article, while investments in analytics are booming, many companies aren't seeing the ROI they expected, struggling to move from a few successful cases to scaling analytics and data-driven decision making across the organization. Current and aspiring leaders of analytics groups must be able to connect and communicate the business outcomes of their work in their specific field and forge inroads with partners in roles across the organization.

Data science and analysis is becoming a 21st century job skill for every discipline.

While big data and analytics skills are widening career opportunities specifically in fields like data science, according to Burning Glass Technologies' Hybrid Job Economy report, the bigger impact is on jobs that once had little to do with statistics, like marketing and business. In fact, Eric Van Dusen, curriculum coordinator for data science education at the University of California Berkeley, argues that data science is a 21st century job skill that everybody should have. “Everybody should have some knowledge of these tools. Every field,” Van Dusen said. “You need to have these skills to succeed in the next generation of jobs.”



Visualize your path to success

Learn how professionals across fields have used [data science courses and programs](#) on edX to accelerate their careers.



Refreshing skills and building new confidence in R programming

Radha, a data analyst in India, used the [Data Science: R Basics course from HarvardX](#) to brush up on the constantly evolving programming language.

“As with any vibrant open source software community, R is fast moving. This can be disorientating because it means that you can never finish learning R. On the other hand, it makes R a fascinating subject: there is always more to learn. Even experienced R users keep finding new functionality that helps solve problems quicker and more elegantly. Therefore learning how to learn is one of the most important skills to have if you want to learn R in depth,” Radha said.

“The program was a great way to fill the gap between my professional and academic experience and gave me confidence to tackle new challenges.”

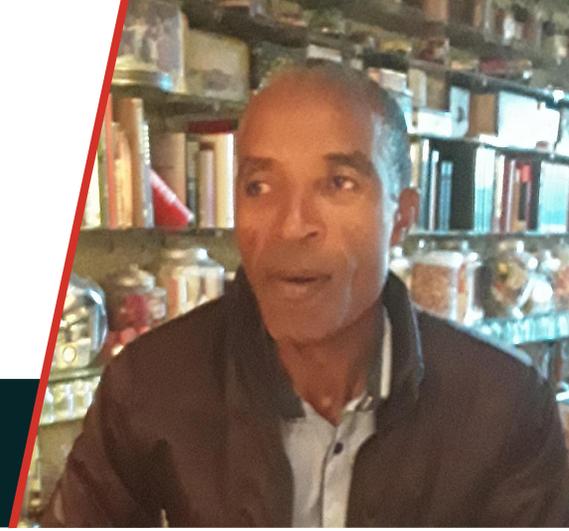


Advice from an IBM data scientist and edX instructor: Start with Python

Joseph Santarcangelo, PhD, IBM data scientist, and instructor for [several edX data science courses and programs](#), from [Python basics](#) to [applied AI](#), believes Python is a key skill to entering the field, but also for professionals in other industries looking to increase their data science skills — and the population of his courses reflects it. Santarcangelo instructs learners looking to become data scientists and developers, but also others who want to apply data science to their existing field.

“Even some years ago, if you wanted to perform any kind of data science task, you had to spend a lot of time understanding the concepts, learning the programming languages, but now all you really have to know is Python and have a basic understanding of what’s going on and it’s pretty remarkable where you can go,” Santarcangelo said.

“Most of what I do is things I learned in the beginning. I’ll spend a long time learning a framework. A lot of it’s just going into Python, understanding the language, understanding what does what. The first step is the largest and you’re going to make the biggest jump; you’ll get 70% of the way there in your first few steps. A year of studying data science will get you very far.”



Studying the science of uncertainty in uncertain times

Joseph, a consultant in Zambia, took an [MITx Probability course](#) two times before finally completing it and earning a Verified Certificate – he has now moved on to pursue the full [Statistics and Data Science MicroMasters® program](#) and has dreams of earning his PhD.

“I audited The Science of Uncertainty and Data course twice. The first time, the learning curve was steep for me. The second time, we started experiencing massive viral spread in my country so I couldn’t complete it. Then this year, the coronavirus seemed initially to be a big obstacle to continuing my studying, but I later realized it was such a big opportunity for me to complete my course. With restrictions in place because of COVID-19, I had time to commit to my studies. It was this time that I realized that the bigger the problem, the bigger the opportunity. For me, COVID-19 restrictions turned out to be an opportunity finding time to study and complete my studies,” Joseph said.

“From the time I started my course, I have been doing some consultancy on a part-time basis and was assigned the Revenue Authority in my Country. I found this course of great help especially when it came to dealing with the aspect of uncertainty and randomness because the nature of work demanded management of such processes. I am already coaching some youth in cognitive skills and some disruptive technologies that I have so far learned from edX. My focus is to steer interest in the uptake of disruptive technologies locally.”

New normal, new knowledge

From Python and statistics skills to advanced Excel and data visualization, and more, [explore top courses and programs](#) and get going towards achieving your business career goals.

Key skills for a new normal in data science and analytics

FOR THE DATA-DRIVEN MANAGER AND FUNCTIONAL ANALYST

- Data analysis
- Microsoft Excel
- Python
- SQL
- Tableau
- And more

FOR DATA SCIENCE CAREERS

- Data mining
- Data modeling
- Python
- SQL
- R
- Machine learning
- And more

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