

Data Science Bootcamp

ASU Arizona State
University

Bootcamp Brochure



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Overview

Data science is a rapidly evolving field with applications in nearly every industry. As massive amounts of data are generated, stored, and analyzed to inform strategic decisions, the ability to interpret raw data and extract meaningful insights is invaluable.

This versatility makes data science indispensable. Once you learn to think like a data scientist and use popular tools and techniques, you can apply your skills in sectors such as marketing, health, finance, technology, sports, and public policy.

As a data scientist, you will analyze large volumes of structured and unstructured data to identify

patterns, build predictive models, solve problems, and create visual narratives. This role requires knowledge of mathematics, statistics, and computer science. If you are curious, enjoy problem-solving, and are comfortable working with numbers, this career path could be right for you.

No prior coding experience is required for this bootcamp, as it guides you from beginner to aspiring professional. The curriculum covers programming fundamentals, data visualization, natural language processing, statistics, and machine learning, laying the foundation for a career in data science.

Beyond data science

You'll learn how to write code that interacts with databases and extracts data to solve real-world problems. The advanced curriculum covers key machine learning and artificial intelligence concepts and their practical applications.

Throughout the bootcamp, you'll develop skills to think beyond coding or basic analytics. You'll also learn to communicate data insights to both technical and non-technical audiences through effective visualization. As you progress, your understanding of machine learning and artificial intelligence applications will enhance your own projects, helping you grow as a data scientist.



The process

- 1** Log onto your personalized dashboard
- 2** Complete coding exercises online
- 3** Your Mentor reviews your work
- 4** Perfect your coding over 3-6 months
- 5** Receive a certificate of completion
- 6** Begin your new career in tech with our post-bootcamp support



Code review in partnership with HyperionDev

Bootcamp code reviewers and mentors are expertly trained to integrate code review into the learning experience. This on-demand approach helps participants become fluent in their chosen area of study faster.

Our one-on-one code review approach works

Code review helps you learn to code the right way by mastering the deeper aspects of software development that are essential for a career in tech. We help you build a strong foundation for a successful career in coding.

Why learning through code review is smarter

Don't make the same mistakes as computers

Automated code checking is like spell check for computer programs. But you can't write a world-class essay with just good spelling – you need the right tone, facts, grammar, and style. Only human-led code review can help you learn aspects of coding that are analogous to tone and style that will make you truly fluent as a developer – automated graders just can't help you learn this!

Be exposed to industry standards from day one

In the tech industry, developers have their work assessed through code review by senior developers. We are the only bootcamp that introduces this technique from day one, giving you a competitive edge in the job market.

Get unstuck with on- demand technical help

Our code reviewers help you debug your programs, ensuring you maintain steady progress and stay on track.

A unique, proven and personalized approach to code review

A safe space to learn and grow

Human-led code review fosters trust with your mentors and allows you to learn at your own pace. It provides a supportive environment to discuss challenges without fear of failure.

Join a community of career changers

Learn alongside a cohort of bootcamp participants who are also pursuing career fulfillment. Engage in online group tutorials, community chats and peer coaching.

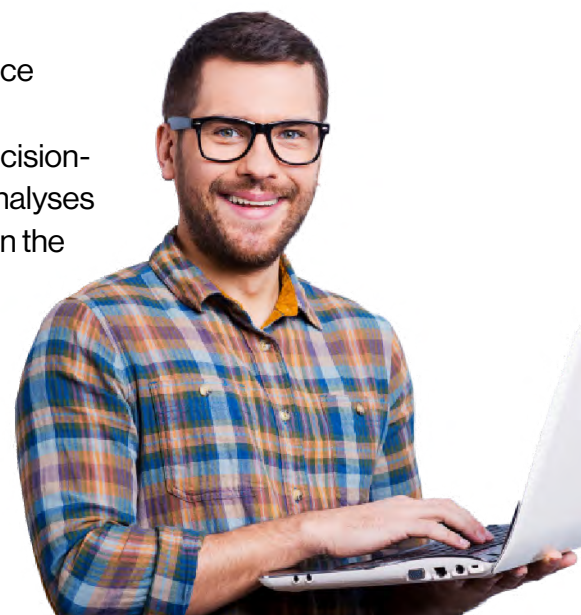
Industry experts with expertise tailored to your goals

You'll work with experienced code reviewers and mentors who provide guidance through one-on-one calls and email support.

Why choose data science as a career?

Data is only as valuable as the actionable insights it provides. Data science involves processing raw data using domain knowledge, data-cleaning techniques, and algorithms to extract meaningful insights that inform decision-making. Data scientists bring significant value by conducting in-depth analyses and communicating solutions to stakeholders. Due to their importance in the tech industry, data scientists are in high demand and earn high salaries.

If you're seeking a career that is both rewarding and lucrative, data science offers both. Those who develop data science skills can pursue various career paths, from business analyst to machine learning engineer.



How we help you get hired

We're with you every step of the way, and our support doesn't end when you graduate. Our career services are designed to help you stand out from the competition and get noticed by top employers.

Technical résumé and portfolio

Receive technical assistance in getting your résumé and tech portfolio industry-ready by applying accepted best-practice formats.

Interview preparation

Know what to expect when getting ready for that big interview with expert interview preparation guidance from professionals who have been where you are.

Bootcamp certificate

Walk away with a newly minted certificate as evidence of your skills and expertise in data science.

Join our hiring network

We work with select hiring partners and aim to help you prepare for and land your first tech job opportunity after completing your bootcamp.



Potential career paths

Data Architect

Data architects design and build data solutions for performance and analytics across multiple platforms. They create new database systems, enhance existing systems, and provide access to database administrators and analysts.

The responsibilities of a data architect include:

- Developing and implementing an organizational data strategy aligned with business processes.
- Identifying data sources and creating a management plan that aligns with the data strategy.
- Coordinating with cross-functional teams, stakeholders, and vendors to ensure smooth enterprise data system operations.
- Defining and managing data flow and information dissemination within the organization.
- Ensuring data accessibility, accuracy, and security.

Machine Learning Engineer

Machine learning engineers create data pipelines and software solutions. They require strong statistics, programming, and software engineering skills. They design and build machine learning systems, run tests, and monitor system performance.

The responsibilities of a machine learning engineer include:

- Designing and developing machine learning and deep learning systems.
- Running machine learning tests and experiments.
- Implementing appropriate machine learning algorithms.



Applications Architect

Applications architects monitor the behavior of business applications and how they interact with each other and users. They also design application architecture, including components like the user interface and infrastructure.

The responsibilities of an applications architect include:

- Designing significant aspects of application architecture, including the user interface, middleware, and infrastructure.
- Providing technical leadership to the application development team.
- Performing design and code reviews.
- Ensuring consistent enterprise-wide application design standards.
- Collaborating with stakeholders to align architecture with business requirements.

Business Intelligence (BI) Developer

BI developers create strategies to help business users find the information they need to make informed decisions. They use BI tools or develop custom applications to enhance user understanding of systems.

The responsibilities of a BI developer include:

- Designing, developing, and maintaining BI solutions.
- Crafting and executing data queries upon request.
- Maintaining and supporting data analytics platforms.
- Creating tools to store data.
- Conducting unit testing and troubleshooting.
- Evaluating and improving existing BI systems.



Data Engineer

Data engineers perform batch or real-time data processing and build data pipelines to create interconnected data ecosystems. They ensure data accessibility for data scientists.

The responsibilities of a data engineer include:

- Analyzing and organizing raw data.
- Building data systems and pipelines.
- Interpreting trends and patterns.
- Building algorithms and prototypes.
- Developing analytical tools and programs.

Business Analyst

Business analysts examine and analyze business processes, enhance efficiency, and lead project teams. They provide essential technical insights to support business decisions.

The responsibilities of a business analyst include:

- Creating solutions and communicating them to the business.
- Evaluating business processes.
- Managing reports.
- Analyzing data, including pricing, budget forecasts, and plans.
- Effectively presenting data to the business.



Structure of the bootcamp

Our online coding bootcamp helps you progress from a complete novice to mastering the fundamentals of data science, providing a launch point for an exciting and rewarding career in tech. Our mentors, student success team, and career services team guide you on your journey as you advance from a beginner to an aspiring professional. They also help you navigate applications and interviews to achieve the successful career you deserve.

Your learning journey will include:

- **Bootcamp Prep** – Learn about programming and data science in general and how HyperionDev supports your career goals. Begin programming with Python and get an introduction to basic machine learning concepts to help you decide if a data science career is right for you.
- **Python for Data Science** – Learn the fundamentals of Python, which is rapidly becoming the most popular programming language for data science.
- **Data Science Basics** – Work with databases and use popular Python packages to analyze and visualize data, effectively communicating insights. Explore the fundamentals of machine learning and build your first model.
- **Machine Learning and AI** – Deepen your understanding of statistical and machine learning concepts. Progress through tasks to gain a solid understanding of supervised learning, unsupervised learning, and natural language processing (NLP) applications across various industries.
- **Career Readiness and Employability (Post-Bootcamp Completion)** – After completing your bootcamp, you'll receive career support and guidance, including interview preparation and résumé reviews. You'll be equipped with technical skills as well as the professional development tools needed to succeed in your job search. We introduce graduates to the tech industry through networking events, career expos, and job opportunities with our hiring partners. With our support and mentorship, most graduates find employment within six months of completing the program.



What to expect from the data science syllabus

During the bootcamp, you will complete a series of learning tasks, each with a lesson and one or more practical activities. Some tasks introduce new concepts, while others are capstone projects designed to challenge you to integrate the skills you've acquired. These projects allow you to build more complex programs and showcase your learning.

By the end of your bootcamp, you should be able to:

- Demonstrate familiarity with Python syntax and libraries foundational to data science.
- Clean large volumes and varieties of data, transforming them into more usable formats.
- Apply key statistical methods to read, analyze, and summarize data.
- Identify relationships and patterns in data and recognize trends in complex datasets.
- Communicate insights through visual storytelling and reports to support strategic decision-making.
- Create supervised and unsupervised machine learning models to identify relationships in data and make predictions.
- Use NLP to extract insights, such as customer sentiment.
- Solve industry-specific problems using data-driven techniques and domain knowledge.
- Perform version control using tools like Git for collaborative project management, ensuring code quality and maintainability.
- Build and populate a technical portfolio to showcase your skills to potential employers.
- Prepare for tech roles with the help of our career team, which offers guidance and support for your tech career.

With Arizona State University and HyperionDev, you're never alone. Reach out to a code reviewer or mentor whenever you need help. Every piece of code you submit is reviewed by an expert who provides feedback to enhance its efficiency and quality.

We look forward to supporting you on your journey to becoming a data science expert!

Arizona State University is partnering with online education provider HyperionDev to offer a portfolio of high-impact outcomes-oriented online learning programs. Please note that course contents shown here are subject to change without prior notice. These programs are provided by HyperionDev and quality assured by Arizona State University to leverage their thought leadership in technical practice developed over decades of expertise.