

DATA SCIENCE OVERVIEW



Introduction

You will learn the fundamentals of data that are relevant today. You'll learn how to transform unstructured data into strategic insights and use that information to inform decisions. You'll acquire the skills necessary to navigate the complex world of data with assurance and become proficient in identifying important trends and insights.

Ready to switch careers? Hubledge provides the ideal pathway. In just 20 weeks, you will acquire the proficiency required to succeed in data science, leading to new opportunities and responsibilities. Our practical, real-world projects prepare you to take a lead on innovative practices as you deal with industry challenges.

The Role of a Data Scientist

As a data scientist, you will use statistical, algorithmic, data mining, artificial intelligence, machine learning, and other methods to extract, analyze, and interpret vast volumes of data from various sources so that organizations can use it.

In essence, using statistical analysis, machine learning techniques and programming abilities to find trends, create predictive models, and resolve challenging business issues. Furthermore, a Data Scientist find patterns, streamline procedures, and empower businesses to make data-driven decisions by evaluating both structured and unstructured data. Working together across teams, data scientists convert technical discoveries into strategies that stakeholders can implement. They are crucial to industries looking to leverage big data for operational efficiency and competitive advantage because of their proficiency in data cleaning, visualization, and sophisticated analytics.

Data Analytics Career Outlook

The career outlook for Data Scientists is promising, driven by the increasing reliance on data to power decision-making across industries. As businesses continue their digital transformation, demand for professionals skilled in data analytics, machine learning, and AI remains high. Organizations seek Data Scientists to unlock insights from vast datasets, predict trends, and improve efficiency. As companies emphasise data democratization and accountability,

Data Scientists will play a critical role in shaping business strategy and ensuring responsible AI implementation.

Emerging technologies like generative AI, IoT, and blockchain are expanding data-driven opportunities, creating new roles in areas such as AI ethics, deep learning, and real-time analytics. Key industries, including healthcare, finance, retail, and technology, are leading the demand for these professionals.

With competitive salaries, remote work opportunities, and diverse career pathways, Data Science remains one of the top career choices. Professionals with expertise in Python, R, SQL, Cloud computing, and business intelligence tools are sought after. Additionally, the rise of user-friendly tools is opening doors for aspiring Data Scientists to enter the field more easily.

Data science jobs were largely spared from the tech layoffs of 2023, highlighting their importance to business growth. As of May 2024, the average salary for a data scientist in the UK is £53,001. Entry-level data scientists in the UK can expect an average base pay of £39,521 per year.

Your Learning Journey

Module 1

Introduction to Data Science

Learn the foundational concepts of data science, including its importance, key tasks, and common pitfalls. Gain insights into the future of the field and the skills needed to excel as a data scientist.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Understand the scope and significance of data science.
- ✓ Identify skills and tools required for a data scientist role.
- ✓ Analyse real-world examples of data science projects.
- ✓ Anticipate future trends and advancements in the field.

Topics Covered:

- ✓ Overview of Data Science
- ✓ Why Data Science Matters Today
- ✓ Examples of Data Science Projects
- ✓ Skills Needed for a Data Scientist
- ✓ Core Data Science Tasks
- ✓ The Future of a Data Scientist
- ✓ Avoiding Common Data Science Mistakes

Module 2**Data Analysis with SQL**

Master practical SQL skills to query, manipulate, and aggregate data from relational databases. Gain a foundational understanding of database design and relationships for effective data analysis.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Understand the structure and purpose of databases and relationships
- ✓ Use ER diagrams to model database designs
- ✓ Write SQL queries for data retrieval and manipulation
- ✓ Apply advanced SQL techniques to solve complex data problems

Topics Covered:

- ✓ Introduction to SQL for Data Analysis
- ✓ Understanding Databases and Relationships
- ✓ Cardinality in Data Relationships
- ✓ Entity-Relationships Diagrams (ERD)
- ✓ Querying Databases (SELECT, INSERT, UPDATE)
- ✓ Data Manipulation and Aggregation
- ✓ Advanced SQL Techniques (JOINS, Subqueries)
- ✓ Best Practices in SQL Query Optimization

Module 3**Python for Data Science**

Explore Python as a versatile tool for data analysis and visualization. Learn to use popular libraries to clean, manipulate, and present data for decision-making.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Use Python for data manipulation and analysis
- ✓ Leverage Pandas for efficient data handling
- ✓ Create visualization using Matplotlib and Seaborn
- ✓ Build data workflows and pipelines in Python

Topics Covered:

- ✓ Introduction to Python for Data Science
- ✓ Working with Data Using Pandas
- ✓ Data Visualization with Matplotlib and Seaborn
- ✓ Building Data Pipelines in Python

Module 4 Exploratory Data Analysis (EDA)

Conduct detailed exploratory data analysis to uncover patterns, relationships, and distributions in data. Prepare data for advanced machine learning tasks.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Perform data cleaning and transformation to prepare data for analysis
- ✓ Visualize trends, distributions, and patterns in datasets
- ✓ Apply statistical methods to identify relationships in data
- ✓ Utilize Python libraries effectively for EDA tasks

Topics Covered:

- ✓ Overview of Exploratory Data Analysis
- ✓ Data Cleaning and Transformation
- ✓ Visualization Data Trends and Patterns
- ✓ Statistical Techniques for EDA
- ✓ Using Python for Effective EDA

Module 5 Machine Learning with Python

Gain a deep understanding of machine learning concepts. Learn to build, evaluate, and tune predictive models using supervised and unsupervised learning algorithms.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Understand the principles of machine learning
- ✓ Implement supervised and unsupervised learning algorithms in Python
- ✓ Evaluate model performance and perform hyperparameter tuning
- ✓ Deploy machine learning models in real-world scenarios

Topics Covered:

- ✓ Introduction to Machine Learning
- ✓ Supervised Learning Techniques (Regression, Classification)
- ✓ Unsupervised Learning Techniques (Clustering, Dimensionality Reduction)
- ✓ Model Evaluation and Tuning
- ✓ Deploying Machine Learning Models

Module 6**Neural Networks**

Understand the building blocks of neural networks and their applications in deep learning. Learn how these models work and how to train them effectively.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Describe the architecture and functionality of neural networks
- ✓ Select and implement appropriate activation functions for tasks
- ✓ Train neural networks using optimization techniques
- ✓ Address common challenges in deep learning workflows

Topics Covered:

- ✓ Introduction to Neural Networks
- ✓ Neural Network Architectures
- ✓ Activation Functions and Optimization
- ✓ Training Neural Networks
- ✓ Challenges in Neural Network Implementation

Module 7**Artificial Intelligence
(NLP & LLM)**

Delve into the exciting field of Natural Language Processing (NLP) and Large Language Models (LLMs). Learn to process text data and create AI-driven solutions for real-world tasks.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Analyse text data using NLP techniques for sentiment analysis and topic modelling
- ✓ Generate text using Large Language Models (LLMs)
- ✓ Develop AI-based tools like co-pilots and chatbots
- ✓ Implement NLP techniques for diverse real-world application

Topics Covered:

- ✓ Sentiment Analysis and Text Classification
- ✓ Topic Modelling for Text Data
- ✓ Text Generation with LLMs
- ✓ Building AI Co-Pilot and Chatbots

Module 8**Cloud Data Science with AWS**

Learn to use AWS tools and services for scalable data science workflows. Gain hands-on experience in deploying models and managing data in the cloud.

Learning Outcomes:

By the end of this module, students will be able to:

- ✓ Leverage AWS services for data science workflows and analysis
- ✓ Train machine learning models using Amazon SageMaker
- ✓ Deploy models with no code and pre-trained solutions using SageMaker Canvas
- ✓ Utilize cloud tools to manage data and scale workflows efficiently

Topics Covered:

- ✓ Introduction to AWS for Data Science
- ✓ Training Models with Amazon SageMaker
- ✓ Using Sagemaker JumpStart and Pretrained Models
- ✓ No-Code Solutions with SageMaker Canvas
- ✓ Deploying Machine Learning Models on AWS

Additional Learning

Capstone project

Capstone is a milestone in your learning journey. Designed to consolidate the knowledge you gained and applied to solve a real-world problem and present findings. Our instructors will provide guidance and support to ensure your project is of a high standard.

Portfolio projects

The projects you completed will be added to your portfolio to demonstrate the skills and experience you have gained from the course. Populating your portfolio with the right projects can go a long way toward building confidence that you're the right person for the job, even without previous work experience. At the end of the course, you will add eight projects to your portfolio.

The Learning Experience

Live instructor-led classes

Instructor-led training is conducted online, explaining new concepts and debriefing on assignments to deepen learning and understanding. The support team will follow up via email and phone calls to ensure assignments meet the deadlines.

Career Support

Our career support team provides the professional skills you'll need to get you ready for the job search. We offer guidance and support with resume construction, interview preparation, optimize your LinkedIn profile and keep you motivated with the job search.

Physical meet-Up

Periodic physical activity-laden meetups. The meetups will bring the students together at a physical venue to exchange ideas, socialise and learn from each other.



Onboarding

Information is provided on the learning resources, schedule, installations and how to optimise the learning management platform and opportunities available in this programme.

Hands-on practical projects

Apply what you have learned to practical projects so that your acquired skills are put to use and useful, whether you are looking for work or seeking new opportunities.

Peer-to-peer discussion and activities

Further, explore real data using various instruments learned, share your experiences with peers and discuss key takeaways from lectures and other external inputs. Interact with other data analytics professionals, you can connect with to exchange ideas and share opportunities.

Advanced Tools

Become proficient in using industry-standard tools such as Python, Jupyter Notebooks, Numpy, Matplotlib, Scikit-Learn etc to get you ready for work opportunities.

Format and Schedule

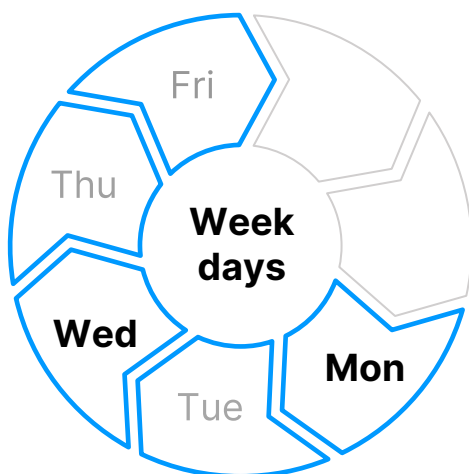
Cohort-based module of learning

- Instructors led online classes.
- Self-paced learning (asynchronous format)
- Peer review sessions to discuss challenging and complex topics.
- Live discussions with subject matter experts with live Q&A at the end of the presentation
- Periodic meetups are organised for face-to-face discussions with the instructors and among fellow students

Duration: 20 weeks – Part-Time: Learn without quitting your day job

Location: Fully online – allows you to study from anywhere in the world

Virtual instructor-led classes on Microsoft teams

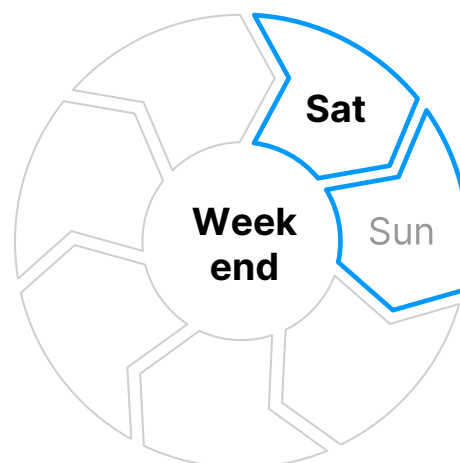


- **Monday**
- **Wednesday**

6pm – 8pm (GMT)

- **Saturdays**

11am – 3pm (GMT)



Programme Fee and Payment Options

The table below explains the payment options we have in place to join this boot camp. Our prices are competitive and affordable for anyone interested in the programme.

Contact us via email if you have questions or are seeking clarification, and a member of our admissions team will respond.

Programme fee: £1500.00 Duration: 20 weeks/Part time						
Payment options	Original Fee	Discount	1 st Payment	2 nd Payment	3 rd Payment	Total paid
Pay upfront	£1,500	£500	£1000	£0	£0	£1000
Pay in 2 instalments	£1,500	£300	£800	£400	£0	£1200
Pay in 3 instalments	£1,500	£200	£610	£345	£345	£1300

Join our next cohort

1

Complete the application form, using the links below

<https://hubledge.com/data-science-application-form/>

2

You will receive an automated email with instructions and information on the next steps

3

Complete the payment process to be accepted into the next cohort!

Are you ready for a career in Data Science?

If so, you're in the right place. We'll assist you with achieving your goal to become a skilled data scientist.

Contact Us:



www.hubledge.com



admissions@hubledge.com



[Schedule a call](#)

Disclaimer: We do not guarantee job placements, we will support you with our resources to help you get into employment!