

**New College of
the Humanities**

Securing Your University Offer for Data Science

Essay Competition Award Ceremony:
August 2nd, 2022





Agenda

- Welcome
- Studying Data Science at University: an Overview
- Submitting a Competitive Application
- NCH Insights
- Q&A



Studying Data Science at University: an Overview

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What is the study of Data Science?

- Data science is an exciting, emerging discipline that has a profound impact on society. The world produces increasing volumes of data every day, and making sense of this data has the potential to be transformative
- Data science combines mathematical, statistical and computational approaches to analyse and gain practical insights from the data produced by modern societies
- Courses may include coding; computing skills; algorithmic reasoning; statistics; machine learning; and AI and data ethics
- Courses may offer exciting opportunities to learn about and develop an understanding of different programming languages such as Python, JavaScript and Scala



Where and how can you study Data Science?

- Single honours BSc Data Science
- Many joint and combined honours options, e.g.: Data Science and Computer Science; Data Science and Software Engineering; Data Science with Artificial Intelligence (*note that the study balance is likely to be other than 50/50 if it's Data Science *with* rather than Data Science *and*)
- Qualifications range from BA, BSc, BEng, through to HND, HNC, and Foundation Certificates
- A number of universities offer four-year undergraduate or integrated Masters degrees (MSci) in Computer/Data Science
- Degree apprenticeships take a more practical approach (potentially useful to fast track toward particular careers)
- Full-time/part-time; online/in-person; flexible study options, as well as courses with industry placement (sandwich courses)

How is Data Science taught?

- **Lectures:** Lecturers will discuss different programming techniques and help you develop an understanding of the fundamentals of data science and analysis
- **Seminars:** Seminars allow for a more in-depth discussion of a topic and a chance to ask any questions to your lecturer/seminar supervisor. It's probably even more important that you are well prepared for the seminar as you will need to participate
- **Labs:** Interactive, hands-on practical learning experiences
- **Essays:** Formative (helping you to hone your ideas) and summative (assessed), to test your understanding of a subject



What skills do you develop?

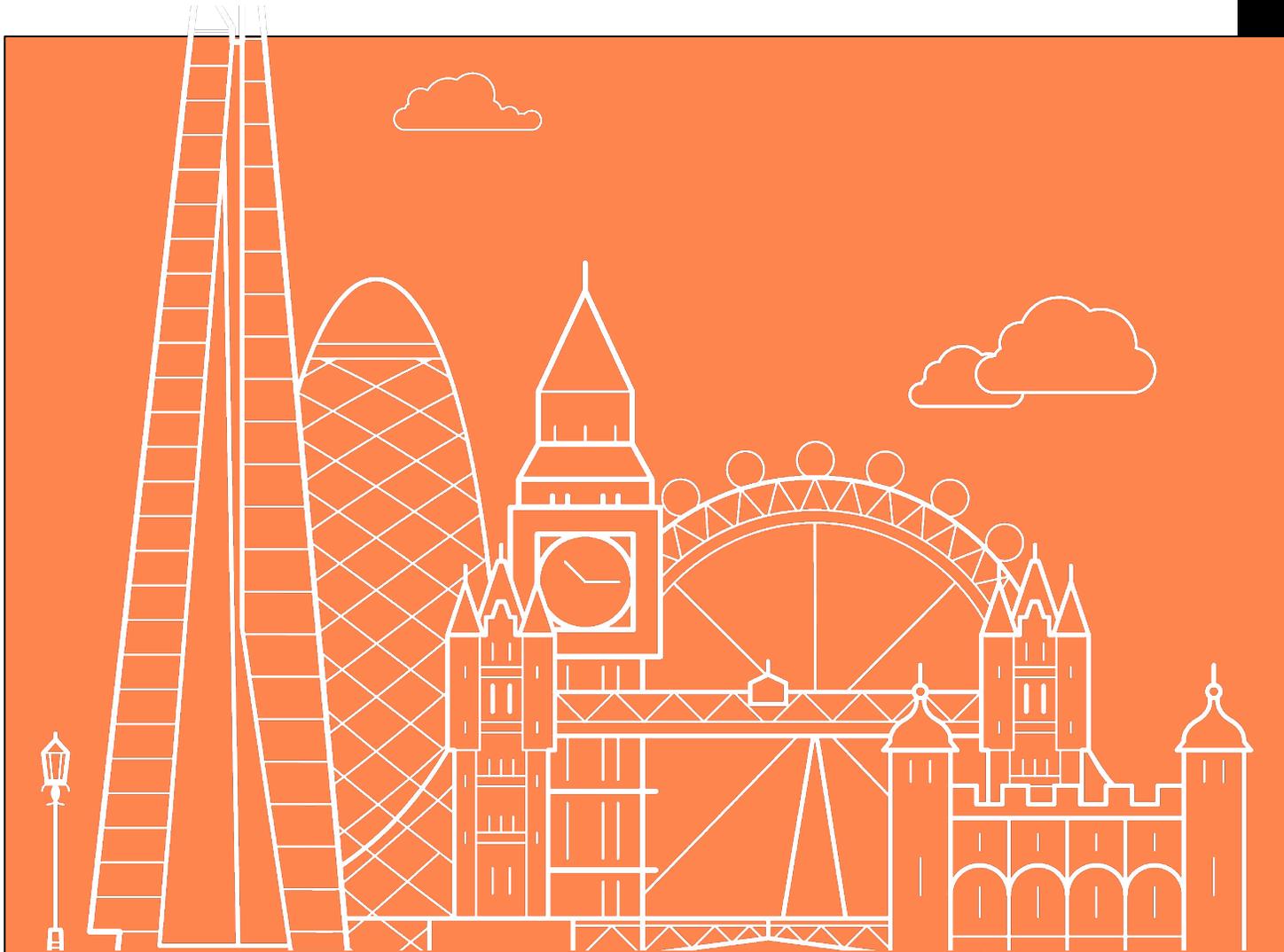
- Computing and programming
- Critical thinking
- Research
- Planning
- Statistical analysis
- Algorithmic reasoning
- Time management
- Analytical writing

The skills you will acquire as a Data Science graduate will allow you to pivot flexibly into a variety of industries, when you enter the working world.

What can you do after your degree?

As a Data Science graduate your transferable skills can take you into ANY industry. Some of the top graduate destinations are:

- IT
- Wholesale and retail trade
- Manufacturing
- Professional, scientific, and technical industries
- Education



Submitting a Competitive Application for Data Science

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What are the entry requirements?

UCAS

Information provided by ucas.com

A levels:

- Usually need a minimum of two A levels, with three A levels and A-B grades required for the most popular courses
- Entry requirements range from CDD to AAA - typical offer BBC
- May require Maths GCSE

International Baccalaureate Diploma:

- From 30-39 points overall in the IB Diploma

Scottish Highers:

- From BBBB to AAAAB (most frequently required AAABB)
- If Advanced Highers are requested, universities or colleges typically ask for BBB



What are admissions tutors looking for?

- Enthusiasm and motivation to study Data Science
- Credible evidence that supports your subject passion
- Proactive subject exploration and engagement - e.g.: wider reading beyond the set texts
- Relevant extra-curricular/super-curricular activities
- Interests outside of school, relating to Data Science
- Relevant and transferable work experience
- Aims and goals; career plans if known
- Understanding of the demands of studying at university, and how this is different from school

What super-curricular activities would support my application?

Super-curricular activities take the subjects you study further, beyond what you have learnt at school or college. Some examples for Data Science may include:

- Wider reading beyond the set texts
- Reading specialist magazines and journals
- Designing and building web pages or a website
- Learning to code
- Work experience, internships and bootcamps
- Attending university taster lectures or taster days
- Listening to podcasts, TED talks or online lectures
- Attending a Data Science Summer School
- Taking an online (MOOC) Data Science course
- Taking part in university essay competitions!



Why is the personal statement so important?

- Often your only chance to 'sell yourself' to the university and impress the admissions tutor
- Helps to differentiate between equally excellent candidates with similar or identical grade profiles, especially for competitive courses
- Helps if you are a borderline candidate
- Demonstrates your reasons for applying for a course
- May form basis of an interview - tutors may ask questions arising from the statement
- May help if on results day you don't quite make your grades

How can I write a compelling personal statement?

- Invest plenty of time in the brainstorming/thinking stage, before starting to write your statement
- Structure your personal statement
- Use positive and enthusiastic language
- Make every sentence count - word count is tight!
- Ensure it reflects your 'voice', and your 'journey'
- Use evidence to support claims/statements
- Be prepared to draft and redraft
- Be honest - don't exaggerate and don't plagiarise
- Double check grammar and spelling for errors
- Ask for support, especially with proofreading and checking - it's easy for mistakes to slip through!





What might an admissions interview look like?

- Unique opportunity to discuss a subject you are passionate about with an academic tutor
- Opportunity for tutor to get to know you and your motivation for applying - you can also ask questions!
- May take the form of a 'taster' tutorial
- Unlikely to be a test of knowledge - tutor will be more interested in how you think, rather than what you know
- Discussion-based; questions will probe your subject interest, enthusiasm and aptitude
- Questions may build on your personal statement
- Questions will be challenging - don't panic if you don't immediately have an answer; take your time to think
- Some interviews may include a task, or pre-reading



How can I prepare for my admissions interview?

- Carefully reread your personal statement, and be prepared to expand upon any of the points you have included
- Re-read or re-familiarise yourself with any texts you referenced, so these are fresh in your mind
- Undertake any reading or pre-interview tasks in good time
- Practice talking about the points in your statement
- Research who will be interviewing you
- Make sure you are clear regarding interview logistics
- If you will be undertaking a virtual interview, make sure you have somewhere suitable for this task, with good wifi
- Prepare questions you would like to ask in the interview



NCH Insights

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Faculty insights

- Participate in online data science challenges. These allow you to work with real-world datasets and compete against other data scientists from around the world
- Join a local Meetup group or online forum devoted to data science. These groups typically have members who are happy to help answer questions and share resources
- You can add to your knowledge by taking free coding classes in SQL, Python and Tableau. Those will be some of the basic skills you'll need to be able to interpret data and chart and present it. Check out the practical exercises on the Code Academy, as well as the Anaconda Data Science toolkit and Stack Overflow, a recommended forum to help solve problems with Python
- There are free games online that you can play that help you learn programming languages, such as TwilioQuest, SQL Murder Mystery, or CodinGame
- Check out the Women in Data Science podcast (Stanford University)

Student tips and hints

- Data Science students come from a broad range of academic backgrounds, so don't worry if you don't know everything about the subject, or haven't formally studied it before!
- Get experience working with data. This can be done through internships, webinars, online courses, and bootcamps
- Listen to podcasts like The Data Scientist Show
- Check out the science news and science articles on <https://www.newscientist.com/>
- Enter the competitions on [kaggle.com](https://www.kaggle.com/)
- Learn some coding! [freecoursesinengland.co.uk](https://www.freecoursesinengland.co.uk)
- Take one of the Open University's many free online courses



Suggestions for wider reading

- Bruce, A and Bruce P (2017) ***Practical Statistics for Data Scientists***. California: O'Reilly Media
- Reitz, K and Schlusser, T (2016) ***The Hitchhiker's Guide to Python! Best Practices for Development***. California: O'Reilly Media
- Stevens, P (2020) ***How to Write Good Programs: A Guide for Students***. Cambridge: Cambridge University Press
- VanderPlas, J (2016) ***Python Data Science Handbook***. California: O'Reilly Media
- Wheelan, C (2014) ***Naked Statistics***. New York: W. W. Norton & Company



Q&A



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New College of
the Humanities



@NCHLondon

Devon House

58 St Katharine's Way, London,
E1W 1LP, United Kingdom

nchlondon.ac.uk

info@nchlondon.ac.uk

+44 (0)20 7637 4550

**New College of
the Humanities**

