Big Data Analytics

MSc

The Guardian TOP 50 University Guide 2015

College of Engineering and Technology

UNIVERSITY of DERBY

www.derby.ac.uk/engtech

Big Data Analytics

MSc

Essential Information

Location
Derby campus, Kedleston Road

Duration
One year full time, two years part time

Start dates
September

Entry requirements
An undergraduate degree (lower second or above) or equivalent in a science, technology, engineering, mathematics subject, or a closely related discipline with significant mathematical content. Applicants without these qualifications may still be considered if they can demonstrate relevant work experience in a management or supervisory position – please contact us for more information.

Entry requirements for EU/International students
You'll need the international equivalent of an undergraduate degree (lower second or above).

Suitable for applicants from

The course aims to

- Develop the technical expertise and industrial experience you need to progress a career or launch an enterprise in big data analytics.
- **Equip you with high-level skills in business intelligence, data analytics and database technology.**
- Help you harness the full power of SAS software, thanks to our partnership with the global leader in business analytics services.

About the course

Big data is all around us; 2.5 quintillion bytes of data are created every day. 90% of the data in the world has been generated in the space of the last two years. As a result, skilled professionals who can identify and obtain intelligence from big data are increasingly in demand.

Our MSc in Big Data Analytics provides a foundation for you to pursue a career applying leading edge software analytics technology or conducting research in this vitally important field. It will give you in-depth knowledge and critical understanding of the key issues and concepts. You'll develop powerful skills in the extraction, analysis and management of information from big data using a variety of scientific techniques and software tools.

One of the course's key strengths is that it is designed in conjunction with SAS, the global leaders in data analytics, whose data mining and business intelligence platform is widely used in academia and industry. You'll have the opportunity to gain SAS 9 base certification. We also boast strong links with employers through our research and high-profile consultancy projects, ensuring that our teaching remains up-to-date and relevant.

You'll be introduced to knowledge discovery, analysis and assessment of data extracted from structured and unstructured big data-sets, visualisation and communication of results. You'll process advanced knowledge and information, make deductions and form conclusions. The practical skills you'll develop include computer modelling and the design and analysis of big data sets. The broader skills include communication, teamwork, management and the ability to use advanced quantitative methods.

As part of your studies, you'll address real-world industry-based problems during supervised computer sessions and through independent work. This intellectually demanding process requires not only specialist knowledge of big data analytics, but also the ability to apply multidisciplinary concepts to today's dynamic business and scientific areas.

With the MSc, you'll be equipped for careers in business intelligence and data analytics in any type of industry, in consultancy or in entrepreneurship. The course also provides a foundation for progression to a PhD or MPhil, allowing you to pursue your research interests.

Course content

This course is made up of three stages – Postgraduate Certificate, Postgraduate Diploma and MSc.

Postgraduate Certificate

You'll study these modules:

Business Analytics with SAS

You'll have the opportunity to work with representative, real-world data-sets to enhance your understanding of the issues involved in managing and analysing data. You'll also explore the practical aspects of data mining and management data analysis and presentation, using the SAS product set.

Statistical Techniques

You'll develop a rigorous understanding of statistical concepts relating to probability, data analysis and statistical modelling. The emphasis is on applying these concepts to real-life problems through the analysis of data and interpretation of results, supported by relevant software tools.

Studying at Masters Level and Research Methods

This module helps improve your ability to study at masters level and to develop, plan and execute a project using research processes. A pre-requisite for your Independent Scholarship module at the MSc

In conjunction with

SAS
THE POWER TO KNOW.

stage, it enables you to review and evaluate academic literature, to gain an understanding of research design and methodological enquiry, and to systematically analyse researched data and theories.

Postgraduate Diploma

You'll study these modules:

Processing Big Data

A variety of analytic methods and techniques will be discussed, including machine learning techniques, general data mining algorithms and analysis of techniques for unstructured data assessment.

Information Visualisation

Companies today are overwhelmed with data which is doubling in volume every 12 to 18 months. On this module you'll work with high performance visualisation tools to explore new ways of dealing with this growing 'data lake' and ensure effective managerial action.

You'll also take one optional modules from the list below:

Analytics: Ethics, Trusts and Governance

You'll look at how companies can develop, deploy and manage their information analytics assets in a way that meets best practice in terms of corporate governance, information security, IT, law, corporate and information strategy, effective project delivery, ethics and ensuring a low carbon footprint.

Comparative Analytics Tools

The use of analytics tools is essential in extracting intelligence from Big Data. This module enables you to undertake a critical evaluation of the main software analytics tools.

Natural Language Processing

Using relevant software tools, you'll develop a reflective and critical understanding of the main approaches to Natural Language Processing (NLP) and text mining. This module provides an insight into the extraction and analysis of data-sets of various origin.

Optimisation

Many problems that cannot be solved by classical methods can be investigated using modern optimisation techniques. On this module you'll implement a diverse range of optimisation techniques using relevant mathematical software.

MSc

You'll study this module:

Independent Scholarship

This is your opportunity to demonstrate your ability to apply what you have learned on the course in an independent and rigorous fashion. Through a substantial research project, you'll demonstrate that you are able to formulate and tackle real-world commercial problems competently and efficiently. Your project will lead to the development of a 'product' such as a piece of software, a detailed design for a system, a feasibility study or a piece of creative work.

Similar courses:

- MSc Computational Mathematics
- MSc Information Technology

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Essential Information

How To Apply
www.derby.ac.uk/applyonline

Fees for UK/EU students
2015/16 fees have not yet been set. Please see our website for the latest information.

Fees for International students
2015/16 fees have not yet been set. Please see our website for the latest information.

Contact us
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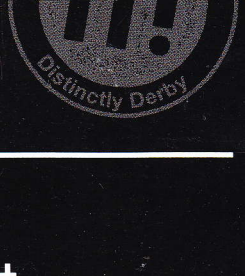

If you'd like this information in large print, braille or audio please contact:

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The information in this leaflet was correct at the time of printing; please check our website for the most up to date information.

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