

# CENTRE FOR INTERDISCIPLINARY METHODOLOGIES

## Postgraduate Taught Programmes

MA Digital Media and Culture

MSc/PG Dip Big Data and Digital Futures

MSc Urban Analytics and Visualisation



**WARWICK**  
THE UNIVERSITY OF WARWICK

# IT'S NOT WHAT YOU KNOW, OR WHO YOU KNOW, BUT 'HOW YOU KNOW' THAT MATTERS.

As the world continues to be transformed by data, analytics, media and computational processes, there is an ever-increasing demand for interdisciplinary skills and knowledge. Our societies, cultures, institutions and cities are increasingly networked, and 21st-century careers require both joined-up thinking and the ability to develop innovative solutions. At the Centre for Interdisciplinary Methodologies (CIM), we nurture creative and critical approaches that will help you open doors to a variety of emerging career paths.

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**Our wide-ranging postgraduate courses give you the perfect platform to approach 21st-century concerns:**

What are the opportunities and challenges of big data? How do digital sensors offer new ways to shape smart cities? How can social media help us get a grip on world-changing events?

**Our three postgraduate courses offer the opportunity to develop your skills and knowledge in new and exciting ways – whatever your background.**

Our diverse cohort of students come from disciplines such as sociology, mathematics, geography, communications, animation and the theatrical arts. We embrace this broad mix of expertise, and allow you to tailor your studies around your own ambitions and research interests through our equally broad range of research and research-led teaching. You'll find a range of the modules we have on offer at CIM throughout this brochure, but our offering is constantly evolving to reflect the needs of our students and the world around us.

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**At CIM, you won't be an anonymous student in a large department. Our close-knit community will offer you regular and direct access to teaching staff, as well as opportunities to work closely on projects with your fellow Master's students, PhDs and faculty.**

Our teaching team includes experts in areas ranging from computer science and sociology, to media studies, design, architecture and anthropology. With regular computer lab sessions for many modules, whether you're already an advanced programmer or you're just starting out, you'll have plenty of opportunities to develop and strengthen your practical skills. You'll also develop leadership and team-building skills through group projects and interactive tasks, which have previously included a 'Data Dive' at the Shard in London, data sketching workshops, or an analytics boot camp, depending on your chosen course.

## DEVELOP THE SKILLS AND KNOWLEDGE YOU NEED

Across our three programmes, you'll find an array of optional modules\* to either deepen your knowledge from your core study, or add further breadth to an already diverse year of study. Many of our modules are available to students across more than one of our programmes. But with so much to choose from, how do you decide what to study?

To help get you thinking about the areas that could be most relevant to you, take a look at some of the optional modules our students have studied recently.

### DIGITAL OBJECTS, DIGITAL METHODS

In the era of networks, big data and digital innovation, traditional objects in society and culture, such as texts and pictures, open up to new methods of research. At the same time, computational methods are today used to co-create new objects: networks, databases, platforms, visualizations, maps and many other new forms of culture and society. This module provides an advanced introduction to the novel research methods and objects enabled by the digital. Through lectures, seminars and lab sessions, you will examine specific digital objects relevant to the humanities and social sciences, such as trends and networks, and analyse these using methods that include ethnography, mapping, network analysis, platform studies, listening and others. Sociology, technology studies, politics and media studies sit alongside cultural theory, computing and creative practice as the fields that these new methods take inspiration from.

### USER INTERFACE CULTURES: DESIGN, METHOD AND CRITIQUE

This module focuses on graphical user interfaces for web and mobile apps to critically explore the economic, technical, aesthetic and political dimensions of contemporary interface cultures. Your studies will foster and explore critical and technical knowledge of interfaces through a number of experimental methods for interface research and criticism that form practical investigations of not only what an interface is, but also how it is designed. You'll be introduced to a number of commercial interface design methods, with the aim of developing an understanding of the 'interface industry', and equally with the aim of 'repurposing' methods for experimental research. Source material spans computer science, design theory, art practice and new media studies, which you will use to unpick what an interface is, how it relates to you and what is embedded in its design.

\*Many of the core modules for our courses are also available as optional modules for other courses. Please see our website, [warwick.ac.uk/cim](http://warwick.ac.uk/cim), for a full list of available modules across the department.

### VISUALISATION

Data visualisations have become an everyday means to make sense of data, and are becoming a fundamental currency for exchanging information. In this module you'll examine the highly interdisciplinary subject of visualisation from a wide variety of perspectives such as cartography, statistics, architecture, information design, and science and technology studies. Through lectures, coding labs and other practical lab sessions, you will investigate how encoding data and information within graphics alters how we receive and process information, and the relationships we develop with that information.

Through the module you will develop the analytical skills and knowledge to think critically about how visualisations support, alter or intervene in our relationships with information and the worlds that the visualisations explicitly or implicitly represent. At the same time you will learn how to create visualisations (using the programming language 'R,' or through data sketching) and understand the limits of visualisation as a set of methods.

### DIGITAL CITIES

This module explores the potentials and challenges for digital technologies, big data and urban analytics within "smart city" projects. The module is based on seven guest lectures from researchers and practitioners from external industry, government and academic organisations, as well as from expertise drawn from the University of Warwick. The lecture topics range from Smart Urban Governance and Citizen Participation, to Wellbeing, Health and Social Inequalities, in order to understand different disciplinary perspectives and methods in research on cities and the current challenges faced by cities across the world.

### DIGITAL SOCIOLOGY

In this module, you'll study how digital innovation is enabling new ways of knowing society in terms of online surveillance, behavioural analytics and real-time research. What are the implications of this for the relations between social science, computing and society? You'll examine new forms of computational social science in the first half of the course, and the intense debates they have sparked in recent years. Do the sensational claims for a new computational science of society hold up? Do we really need new methods in order to study digital societies? What are the implications of the rise of computational sociology for the relations between social research and social life? During the second half of the course you will revisit these questions in hands-on seminars and lab sessions where you will experiment with digital methods in order to imagine new ways of practising sociology with technology.



# MSC URBAN ANALYTICS AND VISUALISATION

With the Department of Computer Science

For the first time in history, more than half of the world's population lives in urban areas - towns and cities that are increasingly connected and influenced by "smart" technologies. Urban Analytics and Visualisation are emerging interdisciplinary approaches to addressing the urban challenges arising from these developments.

Our unique MSc develops both the practical and theoretical skills needed—such as data analytics, urban theory, and visualisation techniques—to tackle these challenges, combining practice with cutting-edge theoretical and methodological understanding of urban systems. Our course offers you:

- ▶ Deep understanding of the nexus between urban life and digital technology
- ▶ Thorough knowledge of interdisciplinary urban analytical methods
- ▶ Practical and analytical skills to explore, visualise, and make sense of city-scale spatial data
- ▶ Interdisciplinary methodological skills to design solutions to the world's urban challenges – capitalising on emerging developments in big data analytics and digital technologies

## WHAT WILL I STUDY?

Through your core modules – **Spatial Methods and Practice in Urban Science; Urban Data – Theory and Methodology**; and a **Dissertation** – you'll gain a broad foundation knowledge and skills to approach the world's urban challenges.

Across your core modules, you'll cover topics ranging from the foundations of urban theory, to advanced use of spatial methods and geographic information systems, while exploring at a deep level the limits of various data and methodologies. Beyond this, you'll be free to choose from a wide range of optional modules, many of which will directly give you opportunities to develop the skills you'll have been learning in your core modules.

## IS THIS COURSE FOR ME?

Unlike most existing courses that focus exclusively on data practices and tools, our interdisciplinary course combines training in theoretical approaches to urban life with practice-based methodological skills. Across the course, you'll develop an understanding of social theories and their application, learning to make informed decisions supported by urban data analytics. Our students have come from disciplines including urban planning, computer science, sociology and politics, to name a few. Most importantly, our students share an ambition to learn how to apply urban data science to real-life urban environments. We also welcome applications from professionals related to city management or planning.

## WHERE WILL IT TAKE ME?

The MSc in Urban Informatics and Analytics equips you for future opportunities within business, government, NGOs and the third sector, where expertise in using analytics and data science to solve urban problems is increasingly essential. The MSc can also be a springboard to a range of careers where you can apply your data analytics and visualisation skills, such as Data Journalism, Finance, Health Care, and Business Analytics. A number of our students have chosen to continue their academic studies through an MPhil/PhD in Urban Science, Interdisciplinary Studies and other relevant disciplines

## WHAT OPTIONAL MODULES MIGHT BE RELEVANT?

In **Interdisciplinary Approaches to Machine Learning**, you can get an interdisciplinary introduction to contemporary machine learning research and applications, specifically focusing on the techniques of deep learning which use convolutional and/or recurrent neural network structures to both recognize and generate content from image, text, signals, sound, speech, and other forms of predominantly unstructured data. Using a combination of theoretical/conceptual/historical analysis and practical programming projects, you will learn both the basic application of these techniques while also covering the historical origins and ethical implications of such applications.

In the **Visualisation** module, you will explore the highly interdisciplinary subject of Visualisation from a wide variety of views - from cartography to statistics, to architecture and information design, and from science to the arts. In the lectures, you will use a variety of lenses in order to understand 'visualisation' as objects, a set of methods and as an interdisciplinary subject. In the practical labs, you will learn how to visualise data programmatically and experiment with how visualisations can be created in order to examine their affordances and the issues surrounding those affordances.

"For me, the most interesting part of the course is applying what I've learned in creating maps with QGIS. Learning how to improve interfaces and visualise data has been really helpful throughout the year. No-one tells you what is going to be best or look best. You try different things, and it's helpful to open your mind and be more artistic, so you can show different information."

**Francisco Contreras Marroquin,**  
MSc Urban Informatics and Analytics



# MSC BIG DATA AND DIGITAL FUTURES

With the Warwick Q-Step centre

*This course is also offered as a Postgraduate Diploma (PG Dip) (9 months full-time / 12 months part-time) and Postgraduate Certificate (PG Cert) (6 months full-time / 12 months part-time).*

This degree responds directly to the growing demand by employers for a new generation of postgraduates who can critically engage with big data theoretically, methodologically and practically. In contrast to many big data-focused degrees (such as Data Science or Data Analytics) where the emphasis is almost exclusively on data practices and computational tools, this degree underpins key practical skills with a range of theoretical approaches to data.

How is our world influenced by big data? How are our lives represented in big data? The MSc Big Data and Digital futures will enable you – whatever your disciplinary background – to understand and act in a society transformed by data, networks and computation and develop a range of interdisciplinary capacities.

## WHAT WILL I STUDY?

Through your core modules – **Big Data Research: Hype or Revolution?; Fundamentals in Quantitative Research Methods; Advanced Quantitative Research;** and a **Dissertation** – you’ll gain a broad foundation of knowledge and skills to both technically and theoretically engage with a host of digital and big data-based challenges.

Across your core modules, you’ll explore in depth the potential applications of big data throughout everyday life, including industry, government and the charity sector, while developing your understanding of quantitative research

and data science methods, from probability and statistical inference to agent-based simulation. Beyond this, you’ll be free to choose from a wide range of optional modules, many of which will directly allow you to build on the skills you’ll have been learning in your core modules.

## IS THIS COURSE FOR ME?

Whatever your disciplinary background, our MSc Big Data and Digital Futures could be the perfect way for you to learn more about the ways in which data and digital processes play a role in everyday life. We’re looking for applicants who can demonstrate an ability to work creatively, and who have a particular interest in big data and digital futures in general.

## WHERE WILL IT TAKE ME?

A Master’s in Big Data and Digital Futures from CIM will give you the skills to follow an academic or professional career working in knowledge-based companies, NGOs, and in such fields as information policy, new media production, public relations, or administration and entrepreneurship in big data and digital culture-based companies. Our MSc will also set you up for further academic studies including our MPhil/PhD in Interdisciplinary Studies, or other relevant disciplines.

Likewise, a Postgraduate Diploma or Postgraduate Certificate will give you an excellent foundation in big data practice and theory, allowing you to gain specific research skills important to your career in a relatively short period of time.

## WHAT OPTIONAL MODULES MIGHT BE RELEVANT?

You might consider **Complexity in the Social Sciences** – another of our 5-day intensive modules – in which you’ll gain an introduction to, and critique of, the main quantitative approaches for modelling complex social systems. Through lectures, labs and group work, you will investigate complex systems through different methodological approaches. Teaching staff on the module are drawn from CIM, Mathematics, Psychology, Statistics, Economics and the Warwick Business School, allowing a broad examination of the diverse techniques and concepts used in understanding complex systems in terms of scale, networks, flows, logic and games.

“The uniqueness of this program was the main factor that attracted me to the MSc at Warwick. This degree program is different compared to other Big Data courses offered in the market. Its aim is not focused solely on teaching students what tools to use to analyse Big Data, but it rather teaches concepts and methodologies that question the essence of using specific data to find new insights and answer particular questions. Thus, this degree prepares you for the future with the long-term view in mind rather than focusing what is only temporary and short-term.

After my Master’s, I took up a position as a Business Analyst at Skyscanner where my work involves providing visual insights and recommendations by creating new methods and techniques for analysing travellers’ data. My long-term career aspiration would be opening my own consulting company, which would specialise in Big Data.”

**Edvin Dudinskij,**  
MSc Big Data and Digital Futures



## MA DIGITAL MEDIA AND CULTURE

Digital media are set to dominate 21st-century culture and society. This course gives you the opportunity to study digital media and to be trained in tools to understand and make use of it critically and creatively.

While the fields of media and communication study the dynamics of film, television, radio and the press, this course addresses how digital processes are transforming culture, the economy and society. It gives you a critical and practice-based understanding of how digital media and culture are being transformed by networks, algorithms and software by memes, trolls, likes and links, by uploads and downloads, by big data, personal data and trash.

### WHAT WILL I STUDY?

Through your core modules – **Approaches to the Digital; a Dissertation; and Digital Objects, Digital Methods** – you’ll gain a deep understanding of some of the most important challenges and debates within the areas of digital media and culture in the 21st-century. Across your core modules, you’ll follow a trajectory through the different layers of digital culture, from infrastructure to memes and beyond, while also gaining an insight into new and emerging societal and cultural entities and methodologies. Beyond your core programme of study, you’ll be free to choose from a wide range of optional modules which will allow you to build on the skills you’ll have been learning in your core modules, as well as exploring new areas of interest to you.

### IS THIS COURSE FOR ME?

This course is aimed at students from a range of disciplinary backgrounds who want to learn more about the emerging field of digital culture and media. Although no specific background is required, your application must demonstrate an ability to work creatively and independently as well as an interest in contemporary developments in digital media and culture.

### WHERE WILL IT TAKE ME?

This degree equips you to follow a professional career in knowledge-based workplaces, whether these are museums or marketing agencies, businesses or charities, new media production companies, editing and copywriting companies, or public relations firms and think-tanks. It also provides you with an excellent academic background to pursue issues in digital.

### WHAT OPTIONAL MODULES MIGHT BE RELEVANT?

In **Ecological Futures: Science, Culture and Media**, you will learn about the environmental crises and challenges that have accompanied the rise of digital culture over the last decades. This will help you to develop an understanding of what ecology means in a range of fields: complexity science, media research, studies of technological cultures as well as visual and artistic practices. You will learn how to reflect critically and creatively on the diverse meanings taken by “ecology” in the earth and environmental sciences, the social sciences and humanities, and develop skills to respond to the pressing environmental challenges faced by contemporary technoscientific societies.

The option **Media activism** investigates art- and media-activist practices leading up to today, examining the impact of social and technological change, the relations between digital and real-world organising, and the role of big data in campaigning. Students will learn about a variety of critical and aesthetic interventions, including tactical cartography and cybersquatting, and investigate how media activism has been leading the way in advocacy for digital futures.



“I had previously studied Journalism in my undergraduate program. However, in this vibrant and fast-changing digital age, I am in need of a more insightful understanding of the relationship between digital media and modern society. In order to discover more possibilities of my career path, I chose Digital Media and Culture to pursue my master’s degree.

One of the most interesting aspects I have experienced during my time with CIM is the clash of various opinions on same issues from multiple dimensions, of which valuable thought experiments proved to be conducive to my ability to think critically. Module tutors have always surprised me with a wide range of academic perspectives to support me unlock the new knowledge and I encountered many “WOW” moments opening my mind to many new areas of interest.

My MA study has led me to the intersection between people and media, culture and society, it has helped me cultivate an interdisciplinary way of thinking and practicing. Thus, apart from becoming a journalist, I have a great variety of career options available. I am currently in a UNESCO traineeship programme, contributing to the UNESCO GREEN CITIZENS project. This shall be the starting point of my long-term professional aspiration in public affairs.”

**He Shuhui,**  
MA Digital Media And Culture

## PUTTING THEORY INTO PRACTICE

Learning to apply the theoretical skills you'll learn through our teaching is at the heart of our Master's degrees. That's why, in addition to lectures and seminars, our degrees include lab-based training, master classes and practice-based workshops.

### OUR PRACTICE-BASED EVENTS INCLUDE:

#### Data Dives

Working with other students from Warwick, through the Q-Step Centre and initiatives such as the New York's Center for Urban Science and Progress (CUSP), CIM students learn to tackle real-life issues using a range of data sources over multiple days. Recent projects include a data dive in the Shard in London looking into London's evening and night-time economy, with students investigating and discussing the possibility of policies which could help improve evenings and nights in London for everyone using data tools. Previous data dives have included visits from representatives of local London Councillors and other non-academic partners, who are very interested to discuss and engage with the research students have undertaken.

#### Master classes in programming: R and Python

Lab-based training is key to how students learn at CIM. Not only do many modules include such training, we also offer master classes and dedicated training sessions focused on specific skills and techniques, such as programming in R and Python. No programming experience is assumed. Students are given hands-on experience, and the concepts and skills introduced in the labs are built upon in CIM modules on Visualisation, Machine learning and Digital Methods.

#### Meme Workshop: Visit by the Open Intelligence Lab (OILab)

This workshop introduced tools and techniques developed by researchers affiliated with OILab (Amsterdam) for studying 'the deep vernacular web' of anonymous and pseudonymous web forums. In the course of the workshop participants had the opportunity to contribute to basic research focussing on 4chan and on Reddit. Together students looked at how online subcultures use in-group slang as well as 'ironic' memes as a means by which constitute themselves as issue publics, focussing on how they imagine both their antagonists and themselves as political collectives.

"I've learned something every day on this Data Dive. All the partners and other members of my group are such experts in data analysis. They've all got more experience than me, and I'm even working directly with my teachers. I've felt involved in the whole week. It's been challenging but really fun. I really appreciate having this opportunity to do something so relevant to what I've been studying. I'd definitely recommend it for future students thinking about courses. I came here to learn more, and have contact with experts, and I've definitely done that."

**Haokun Fu,**  
MSc Urban Analytics and Visualization



## WHERE WILL CIM TAKE YOU?

There's no set background for joining CIM, so it's no surprise that our graduates aren't restricted in their career paths either. Our courses focus on deep interdisciplinary skills that will help you excel in areas as diverse as urban and data science, digital media, publishing, local councils, international consultancy, charities, and further research at PhD level and beyond.

To give you a flavour of where CIM could take you, we spoke to recent graduate Isabella Calabreta about her experience at Warwick and beyond:

"Among all the universities I had considered, Warwick was the one that showed a clear intention behind its module choices. The website provided me with an exciting overview of the subjects, with reading suggestions that I found fascinating. I was looking for a university that would nurture me as a person, and also as a student, and the campus was the perfect location for that.

The most interesting aspect of the course for me was working as a researcher in group with my classmates. The laboratories and the lectures that would prepare us for the fieldwork were the most enjoyable moments, giving us the chance to engage with interactive tools and methods. Beyond that, I loved the opportunity to engage with literature in the digital age. I've always been interested in literature, but never had to study the medium that the book represents, most certainly not in its digital form. The modules at CIM gave me a much clearer idea of what I wanted to do with my life, and where my interests were.

What CIM has taught me first and foremost is how to conduct research and how to critically evaluate its result in light of our current political environment. Those who choose to study media are most likely people fascinated by the fluid reality of the internet, and will hopefully feel in CIM what I felt on my first day: that I had finally met my peers.

Since CIM, I've worked on a number of projects, including helping to curate the content of an Artificial Intelligence website, assisting with user experience testing and research platform, writing for a data-journalism blog focused on Open Data news, and managing a varied number of blogs on movies, literature and sub-culture. I've worked as a Digital Publishing Intern at the Institute of Network Cultures, researching the disruption in the reading flow of the longform, and I am now lucky enough to cover a role that fulfils all my interests, as Online Publishing Assistant at Cambridge University Press."

*Isabella Calabreta studied MA Digital Media and Culture with CIM following her BA in Foreign Literature and Languages at the University of Catania.*



- ▶ We normally require a first or upper second class undergraduate degree. Please see our website for more information and international equivalents.
- ▶ If your first language is not English, we normally require a minimum score of 7.0 in IELTS or equivalent. Please see [warwick.ac.uk/fac/cross\\_fac/cim/study](http://warwick.ac.uk/fac/cross_fac/cim/study) for details.
- ▶ We are especially open to discussing applications from mature students who may have come to higher education through a range of diverse routes. Interdisciplinary methodological skills to design
- ▶ We consider each application on its merits, so please get in touch with us to discuss course eligibility if you are unclear about entry requirements or have any questions.

Fees for students on our full-time Master's courses for 2020/21 are set at £9,870 for Home/EU students (£5,365 per year if part-time); for Overseas students fees are set at £21,130 (£10,995 per year if part-time).

For full details on fees and finance, including the latest details on funding and scholarships, visit [warwick.ac.uk/study/postgraduate/funding](http://warwick.ac.uk/study/postgraduate/funding).

Where possible we consider all eligible applicants for bursaries and scholarships while funds are available, so we encourage early applications from those who'd like to be considered.

### COURSE LAPTOPS

All students on CIM degrees require a laptop computer for their studies. This is provided by the department for students to use and keep, and the cost is included in course fees.

Course information was accurate at the time of printing (01/2020). Our course and module content and schedule is continually reviewed and updated to reflect the latest research expertise at Warwick, so it is therefore very important that you check the website for the latest information before you apply and when you accept an offer. See our website for the latest information.

✉ [cim.applicants@warwick.ac.uk](mailto:cim.applicants@warwick.ac.uk)

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Centre for Interdisciplinary Methodologies  
Social Sciences  
The University of Warwick  
Coventry  
CV4 7AL  
+44 (0) 24 7615 1758

[cim.applicants@warwick.ac.uk](mailto:cim.applicants@warwick.ac.uk)