

SETsquared Scale-Up University Expertise Connected to Digital Innovation

University of Bath

[Digital Lives](#) - investigates how and why people and groups interact with digital technology and the psychological impact it has on their lives. The Group aims to understand how and why technology catalyses, invigorates, and extends the human experience, investigating this from socio-political and cognitive perspectives at each stage of the human lifespan.

[Human Computer Interaction \(The CREATE Lab\)](#) conducts research into the design and evaluation of mobile and ubiquitous technologies. The Lab has worked with industrial partners including BBC, BT, The Guardian, Microsoft, Vodafone, IBM, ScienceScope, Nokia, Aardman and HP.

[Centre for Healthcare Innovation & Improvement](#) - leads and explores multidisciplinary research into health and care systems, and ways to improve them. The Centre brings together expertise in applied health research, including operational research, operations management, analytics, information systems, other quantitative and qualitative research methods and models, and experience from different industries.

[Future of Work](#) – explores how work is changing, and will continue to change, with new technologies, attitudes and ways of working, developing ideas and knowledge within the themes of increasing connectivity, digitalisation and the impact on workers as well as jobs.

[Centre for Biosensors, Bioelectronics and Biodevices](#) (C3Bio) - develops technologies to improve biomedical diagnosis (Lab-on-Chip devices), environmental monitoring, industrial bioprocesses and understanding of biological functions.

[Centre for the Analysis of Motion, Entertainment Research and Applications](#) (CAMERA) is a £5 million research centre which creates advanced motion tracking technologies for use in the entertainment industry, to enhance training and athlete performance, and to help develop assistive technologies. CAMERA's brand new second studio <https://www.camera.ac.uk/innovation-studio/> offers state-of-the-art digital innovation facilities.

[Centre for Digital Entertainment](#) (CDE) – a collaboration between University of Bath and Bournemouth University, is an EPSRC Centre for Doctoral Training, funding doctoral researchers in games, visual effects or animation while they are based in companies that require these skills. CDE offers outstanding and unique opportunities to students and companies alike.

[REVEAL](#) - is an interdisciplinary centre researching virtual and augmented reality technologies

University of Bath, along with the University of Bristol, is also part of a £46m consortium to build on the creative media production, technology and research strengths of the Bristol and Bath region. The [MyWorld](#) creative hub will invest in major new collaborative facilities, fund innovative R&D programmes and support the talent pipeline in this key sector, exploiting digital formats to create new experiences across fiction, documentary, games and live performance. The project will boost productivity, enhance international collaboration and create a platform for inward investment and new jobs, transitioning the region's creative cluster from one of the best in the UK to one of the best in the world.

University of Bristol

[Bristol Digital Futures Institute](#)

At Bristol Digital Futures Institute, we're developing a globally unique research facility right in the heart of Bristol, one the most productive tech clusters in the UK. Bristol is the perfect size & make-up for meaningful engagement with local communities. We're also at the centre of innovation; as a region, we already host open testbed infrastructures across key sectors. Our work will make sure digital innovation builds prosperous, inclusive and sustainable futures that benefit us all. Digital technologies have changed our world. Global connectivity, smart technology and automated systems are already part of our daily lives. This brings opportunities and challenges.

We need to better understand how technologies and people are shaping the future together - or "sociotechnical futures". Rather than waiting for the future to happen, we need to get ahead of it.

Possible engineering projects could include

5G

Digital health

Autonomous cars

Cybersecurity

Quantum

Robotics and autonomy

AI and data

Creativity

Cyber security

Digital manufacturing

Possible Social Sciences projects could include

Integrating conventional and novel data for exploring future scenarios

Speculative design and digital innovation for social inclusion

Digital Innovation

[Jean Golding Institute](#)

The Jean Golding Institute is a central hub for data science and data-intensive research at the University of Bristol.

[National Composites Centre](#)

The National Composites Centre is a world-class research centre, where companies of any size and across industry sectors, can access cutting-edge technology and specialist engineers, to drive innovation in the design and manufacture of composite

[Quantum Technology Enterprise Centre](#)

QTEC is a world-leading incubator for innovators for quantum inspired technologies and an EPSRC skills and training hub which is part of the £270 million government invested UK National quantum technologies programme. QTEC offers a twelve-month fellowship to provide academics with the skills they need to set up a successful technology start-up which will underpin the UK's quantum technology industry.

Research Groups at University of Bristol include but not restricted to:

[Smart Internet Lab](#)

[Digital Health](#)

[Visual Information Lab](#)

[Digital Societies](#)

[Bristol Robotics Lab](#)

[Design Manufacturing Futures Lab](#)

[Bristol Interaction Group](#)

Cardiff University

Cardiff University's expertise in key areas of Digital Technology includes:

Health systems intelligence, precision medicine, digital pathology, wearable sensors, utilising big data for analysis, mathematical modelling

Finance: computer-assisted textual analysis, big data, financial forecasting, blockchain applications.

Industrial digitalisation - engagement of business with digital technology

Environmental - digital solutions for water risk management, Smart Catchments, Digital Twin technology

Intelligent Security and Services

Creative Industries

Key Research Centres, Schools and Academies:

[School of Computer Science and Informatics](#) - extensive experience in computer vision, image and video processing, working closely with the Schools of Psychology, Engineering, Dentistry and Medicine, and also collaborating with industrial partners, police forces, councils and health services.

[Cardiff Centre for Cyber Security Research](#) is one of 19 Centres in the UK to be recognised as an [Academic Centre of Excellence in Cyber Security Research \(ACE-CSR\)](#) by the National Cyber Security Centre and EPSRC.

[The Airbus Centre of Excellence in Cyber Security Analytics](#) works across academia, industry and government to address emerging challenges to cyber security.

[The Data Innovation Research Institute \(DIRI\)](#) conducts fundamental research into the aspects of managing, analysing, and interpreting massive volumes of textual and numerical information. It is the University's hub for data science, encompassing research, teaching, High Performance Computing (HPC) and industry collaboration. DIRI also contains Supercomputing Wales: powerful computing facilities to undertake high-profile science and innovation projects.

[Data Innovation Accelerator \(DIA\)](#) upskills SMEs, working collaboratively to apply data science techniques to produce tangible benefits for the business, and develop innovative AI-driven products and services.

[Cardiff University's Centre for Artificial Intelligence, Robotics and Human-Machine Systems](#) is an interdisciplinary centre across Cardiff University's Schools of Engineering, Computer Science and Informatics, and Psychology.

[Digital Media and Society Research Group](#) explores the uses of digital media within a range of social, political, and cultural contexts, and the resulting implications and transformations in media, communications and society.

[Data Science Academy](#) is a hub for data-intensive science set up to educate the next generation of experts in the field working collaboratively with private, public and third sector organisations.

[National Software Academy](#) is a centre of excellence for software engineering education and tailored courses to meet industry needs working collaboratively with industry partners.

University of Exeter

[Institute for Data Science and Artificial Intelligence](#)

The Institute of Data Science and Artificial Intelligence (IDSAI) provides a hub for data-intensive science and Artificial intelligence within the University and the wider region. The institute brings together leading interdisciplinary researchers from across all of Exeter's Departments, Colleges and Institutes, to drive exciting new research and education. We undertake fundamental research in data science and AI and facilitate interactions between data science researchers and problem owners to develop innovative approaches to the use of data in modern society, considering the social implications of data science and AI as well as the technical.

We partner with Data Science led institutions and initiatives across the region and nationally, creating a truly translational research hub. We have strong relationships with institutions such as the Met Office, the Environmental Futures & Big Data Impact Lab, Q-Step and the Alan Turing Institute (having 25+ Turing Fellows within the university).

[Computer Sciences at the University of Exeter](#)

The Computer Science department includes over 50 academic and research staff with expertise in a diverse areas of the computer sciences. Our nationally recognised teaching accompanied with cutting edge research capabilities creates a dynamic and innovative research environment.

The University is recognised internationally as having expertise in environmental science and big data analytics, as well as having significant expertise in machine learning and artificial intelligence, statistical science, optimisation, uncertainty quantification, data driven computer vision, dynamic modelling and simulation, complex systems, network analysis and High Performance Computing (HPC).

University of Southampton

The University of Southampton is home to numerous research centres and institutes which bring together world leading interdisciplinary knowledge and expertise at the forefront of advancing digital innovation.

Within the department of Electronics and Computer Sciences ([ECS](#)) our research groups span [Cyber Security](#) which focuses on security of distributed computation, protection of critical infrastructures, cyber-physical systems and IoT, security-by-design, privacy, anonymity and trust, human factors and cyber risk, and hardware security; [Centre for Health Technologies](#) which brings together leading researchers and health practitioners in the fields of e-health, healthcare technologies, wellbeing and rehabilitation; [IoT and Pervasive Systems](#) whose activities cut across the full IoT system stack, from underpinning semiconductor and sensor devices, through to machine intelligence and data science; the [Centre for Machine Intelligence](#) covering fundamental research through to high impact applications in the areas of Artificial Intelligence, Machine Learning and Autonomous Systems; [Next Generation Wireless](#) focusing on enabling technologies for communications systems and their components; [IT Innovation](#) specialising in the advancement of innovative information technologies and their deployment in industry, commerce, and the public sector. Covering secure systems, risk management, cyber security, crisis management, decision support, big data, information discovery, IoT, social media analysis and social behaviour in complex human machine networks.; and [Vision, Learning and Control](#) research in image processing and computer vision spanning techniques from pre-processing, to feature extraction and on to image analysis, with applications in biometrics, remote sensing and medical image analysis.

ECS is also home to the: [Zepler Institute](#), the largest photonics and electronics institute in the UK, providing access to one of the most comprehensive collections of nanoelectronics and photonics fabrication equipment in Europe. Hosting extensive cleanrooms integrated with specialist application development laboratories in areas such as communications, lasers, sensors and biotechnology and advanced characterisation facilities: and the [Web Science Institute](#) which coordinates the University's globally recognised expertise on the development and social impact of Web technologies, offering analysis, tools, data and advice to government, business and civil society. It provides insight and intelligence to meet the social and technical challenges posed by Web technologies.

Whist within the faculty of Medicine the [Clinical Informatics Research Unit](#) provides clinical research solutions and services across the globe which advance data excellence, quality, and management and improve research methods. Including applied research in software development, data modelling and definitions, and developing terminology and standards. Providing software and services for clinical research to improve quality and effectiveness, and drive new research questions within research data management. Delivering healthcare innovation through informatics solutions.

The [Centre for Digital Finance \(CDF\)](#) investigates electronic financial markets and banking; along with the business and financial aspects of technology research. The centre aims to foster a deeper understanding and awareness of the complex inter-relationship between business and technology ranging from the impact of digitalisation on traditional financial institutions and corporate governance issues, fintech, and cybercrime to blockchain, crypto currencies, and the future for digital payments.

University of Surrey

Creating machines that can see and hear to understand the world around them, the **Centre for Vision, Speech and Signal Processing (CVSSP)** is an internationally recognised leader in audio-visual machine perception research. With a diverse community of more than 150 researchers, they are one of the largest audio and vision research groups in the UK. Facial recognition for security and medical imaging understanding for cancer detection through to 3D audio and video for film production and robots that can work safely alongside people. [Research Collaboration](#) in the Centre has led to award-winning spin-out companies in the biometric, communication, medical and creative industries

Surrey's Centre of Digital Economy, CoDE, welcomes collaboration to explore how the digital economy changes how we work, how we compete, how we organise and how we innovate. They are particularly interested in Digital aspects of entrepreneurship; business ecosystems; government; ethics and social media.

Surrey's **5G Innovation Centre, 5GIC**, vision sets an ambition to enable a world where everything is provided wirelessly to the end device by a fixed and mobile (converged) infrastructure that functions across the whole geography.

The Centre for Digital Transformation in the Visitor Economy, DiGMY, focuses on the digital transformation in tourism, hospitality, and events exploring smart systems in tourism, hospitality, and events; including artificial intelligence and robotics, sensors and internet-of-things, biometric research, data analytics and pattern recognition in big data. An example is [data privacy](#) such as the project PriVELT a privacy-aware digital platform for personal data management that will benefit both travellers and other stakeholders (e.g. travel service providers, government, and relevant industries) in delivering seamless, personalised end-to-end travel experiences.

The Digital World Research Centre, [DWRC](#), carries out new media innovation projects with social and cultural benefit. To do this they research into new media platforms such as [digital paper](#), content and experiences.

The activities of the [On Board Data Handling group](#), involve cutting-edge micro- and nano-technologies, advanced software developments and biologically inspired artificial intelligence techniques. Hosted within the Surrey Space Centre together with the AI and Robotics, [STAR LAB](#) where advances in autonomous systems and robotics for space take place and the [Autonomous Systems laboratory](#) which has in-house fabrication, integration and testing of a range of robotic systems in an Earth analogue setup for Space projects where commercial-off-the shelf (COTS)-based microelectronics are playing an increasing role in spacecraft systems design. [The Sensors and Platform Group](#), has the remit of developing the instruments, systems and data processing techniques needed to investigate the Earth from space.

The vision of the [Digital Health](#) team at Surrey University is to create Digital Health Technologies that improve health, well-being and social care outcomes. Technological innovations such as SMART homes and cities will transform the way disease is diagnosed, treated, and managed. Increasing amounts of data about patients, their diseases and how these are managed is resulting in personalised models of care. An example is Surrey's Technology Integrated Health Management [TIHM](#) for dementia, which uses artificial intelligence and internet enabled devices to improve support for people with dementia and their carers