University of BRISTOL / **Bristol Digital Futures Institute**

Meet our exhibitors

As many of you will be aware, our event was originally planned as a longer full-day event with a vibrant exhibition space. Due to COVID, our event has moved online, but we hope you enjoy this short introduction to just some of the work you would have encountered at the exhibition.

We look forward to showcasing the work of our colleagues in-person in our next events.

For more information on other the projects and facilities being led by the Institute, visit bristol.ac.uk/bdfi

ESRC Centre for Sociodigital Futures

The Centre for Sociodigital Futures is a £10m flagship investment by the Economic and Social Research Council (ESRC) to establish an international centre of excellence for sociodigital futures research and collaboration and examine sociodigital futures in-the-making.

The Centre will conduct a systematic programme of research across five domains of social life (caring, consuming, learning, moving and organizing) and four key technical fields (AI, AR/VR/XR, high performance networks and robotics) to explore the interplay between the 'big' futures claimed by technology companies and governments and the 'little' futures that are emerging in everyday practice.

Working with strategic partners in industry, government and civil society (including BT, Defra, Locality, the National Cyber Security Centre and UNESCO), the Centre will build theoretical, methodological, collaborative and design-based capacities to explore what might be done to drive sociodigital futures towards fair and sustainable ways of life.

If you'd like to find out more, visit our webpage or contact censof-enquiries@bristol.ac.uk.

MyWorld

Spearheading a globally unique 'creative campus' for Bristol After securing £46 million in funding, the MyWorld creative hub led by Professor Dave Bull is set to generate more than 700 jobs and make the South West an international trailblazer in screenbased media.

The visionary five-year initiative, led by the University of Bristol, will develop major new research and development facilities leveraged with BDFI, and connect its partners, including Aardman Animations, the BBC, BT, Digital Catapult, Bristol Old Vic and Theatre Royal Trust with global tech giants such as Netflix, Google and Microsoft. By forging collaborations between world-leading academic institutions and creative industries, MyWorld aims to be an inclusive incubator of technological innovation, knowledge sharing and creative excellence that's predicted to boost the economy by £223 million.
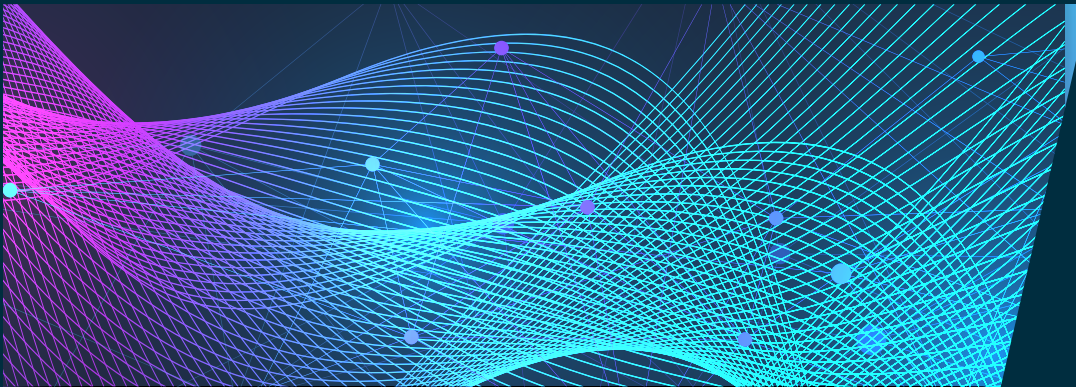
Nomadic Network

Our researchers are developing a cutting edge Nomadic Network ("5G in a box") that can deliver the advanced functionality of cutting edge networks; ultra-low latency, high density of users, guaranteed quality of service through network slicing and software-defined management and support for edge computing etc. but unlike traditional networks, it is designed to be moved around – hence the term "Nomadic"

The system utilises advanced hardware programmable platforms and high-performance commodity computing servers to offer a generic and programmable platform for deployment at the edges of a 5G network. It enables different verticals to deploy and execute on-demand, application specific and customised low latency network functions at the edge of the network. It also provides a point of convergence for various wireless and wired 5G technologies and computing platforms that can be customised for specific services and technologies.

To date, we've launched a Community Fellowship scheme to accelerate community-led innovation through development and provision of the node, and are exploring opportunities in everything from immersive theatre, to instrumenting a city.

If you can imagine a possible use for a deployable '5G in a box' contact bdfi-partnerships@bristol.ac.uk

BDFI Seed Corn Fund Projects

Our Seed Corn fund provides small grants to help University of Bristol researchers drive digital innovation for more sustainable, inclusive and prosperous futures. Here's short introduction to our first five projects, each with a unique question about digital futures. You can read more about each project here and if you feel your work connects to theirs or informs their question we encourage you to get in touch with them directly with the details provided.

Striving for a fairer digital playing field in Brazil

Digital inequality is a significant issue in a country as geographically, economically and socially diverse as Brazil. There's been lots of positive effort to address these issues, but the information and outputs of these efforts are rarely shared. Through recorded interviews this project documents crucial testimonies and gathers the perspectives of key leaders in the country for the first time to collate insights from the last 18 years – a period of significant political upheaval for the country.

The team led by Dr. Edward King ask *"Which forms of digital literacy are needed to effectively support social inclusion?"*

Caring for fragile infrastructures to enhance urban sustainability

From cancelled bus routes to overcrowded housing, we are increasingly aware of the need for innovative and participatory approaches to collectively care for our urban environments, but when people have no geographical connection to a place it's hard to create the collective response needed. ExperieNcing Infrastructures in DisrEpAiR (ENDEAR) is a new immersive virtual meeting system where multiple stakeholders in different locations, with differing perspectives can interact with 3D models of landscape. We hope by connecting people and allowing them to explore together we can inspire collective action in complex problem situations.

The team led by Katharina Burger ask: *How can we leverage immersive experiences in VR to instigate collective action to challenge urban poverty?*

Helping to boost kids' confidence with maths

Research shows that many children experience feelings of anxiety when confronted by maths, which may be contributing to a dip in numeracy among adults in the UK. Using digital technology, and children's play with arithmetic and wooden blocks we're linking maths and play, building positive attitudes to learning maths among primary school children. This AI-driven object recognition app creates music and maths through computer-generated sounds, words and images triggered by real-world play.

The team combined of Prof. Alf Coles and Dr. Michael Rumbelow are keen to connect with people who may be able to user test the system, or have contacts with primary aged groups who could.

Sketching new perspectives on energy systems

Digital technologies are tough to visualise. Most are represented either through highly technical diagrams or abstract futuristic images designed to inspire awe. One example of these technologies is Smart local energy systems (SLES). Combining insights from science and technology studies, computer science, and arts, and working with energy industry experts, our project aims to represent SLES more creatively. Using illustration to provide accessible views of SLES to support public debate.

The team led by Dr. Ola Michalec: *Could you draw a digital future?*

Heroic verse: a poetic push for maths and tech

Poetry plays with the possibilities of language and breaks established conventions. It's therefore uniquely placed to help machines move beyond the standard constructions they're currently capable of and into more diverse iterations of human patterns of language use. This project aims to investigate how poetry and maths can inform one another, generating innovative insights into AI, engineering and mathematical language modelling. To do this they've created poetrishy.org, a multilingual and multidisciplinary online lab space where experimental poetry can drive new ideas in natural language processing. The team lead by Dr. Rebecca Kosick encourage you to try out the site.