

MANCHESTER  
1824

the University of Manchester  
Digital

INSIGHTS FOR LEADERS

# AI at the University of Manchester



The University of Manchester  
Digital Futures

The University of Manchester's Institute for Data Science and Artificial Intelligence (IDSAI) is the access point to the University's expertise in Data Science and Artificial Intelligence, with over 800 affiliated researchers and academic staff.

IDSAI facilitates interactions between researchers and problem holders, owns the University's data science strategy, and delivers sustainable support for the community. Manchester has an engaged data science community (xper)-5puC /P 4aists embedd197(e)23.9 (tishoolholders)11.1 (, o)7

IDSAI supports external engagement with the University's research through activities including internal and external funding sandpits, seminar



# DIGITAL FUTURES

Digital Futures is a highly interdisciplinary network  
that operates across the whole range of  
The University of Manchester's digital research

MANCHESTER SCHOOL OF ENGINEERING

UNDERSTANDING AND DRIVING DIGITAL TRANSFORMATION

ENGAGING WITH CITIZENS, BUSINESS AND GOVERNMENT

PROVIDING THOUGHT LEADERSHIP, SHAPING THE FUTURE

[www.digitalfutures.manchester.ac.uk](http://www.digitalfutures.manchester.ac.uk)

Digital Futures brings together over 1700 researchers from different disciplines across all three of the University's faculties into multidisciplinary communities to tackle important research problems, build critical mass in new and emerging research areas and to work with external stakeholders to support Greater Manchester's ambitions as a leading digital city.

We bring our knowledge to bear on the great issues facing the world in the 21st century, exploring the complex interplay between scientific, engineering, social, wealth creation, and quality of life concerns. We are able to combine our research to meet the needs of the region and the world.

Data science within the University of Manchester Institute for Data Science and AI has a home in all three of the University's faculties: Science and Engineering; Humanities; Biology, Medicine & Health Sciences. Foundational research on Data Science Analytics is focused through our Centre for Fundamentals in AI.

Through our Centre for Robotics and AI our robotics and autonomous systems







# Alan Turing

Turing's name is synonymous with Data Science and Artificial Intelligence at The University of Manchester, from his work here in the 1940s and 50s to our current partnership with the Alan Turing Institute.



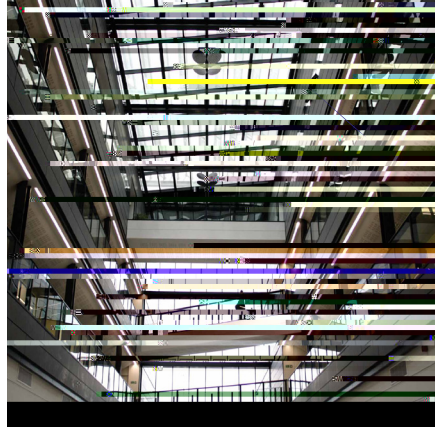
Alan Turing joined The University of Manchester in 1948, as Reader in the Mathematics department. In 1949, he took up the post of Deputy Director of the Computing Laboratory. This coincided with Manchester's work to develop the world's first modern computer: the 'Manchester Baby'.

In 1950 Turing published a seminal paper entitled 'Computing Machinery and Intelligence', in which he first addressed the issue of what was to be labelled artificial intelligence (AI).

In his paper, Turing developed a method to determine whether a machine can be recognised as 'intelligent' by demonstrating human-like thinking - this challenge was called the 'Imitation Game', and is now known as the 'Turing Test'.

Computing Machinery and Intelligence would have a significant influence on AI, a research area that continues exponentially today and where Manchester is still a global centre of excellence.

Turing contributed to the development of the Manchester Mark 1



The University's Alan Turing Building

and the Ferranti Mark 1, the world's first commercially-available digital computer, designed at The University of Manchester by Freddie Williams and Tom Kilburn.

Turing, Kilburn and Williams all now have Manchester buildings bearing their name.



Turing's pioneering work in mathematics, computing and artificial intelligence helped to distinguish and enhance our reputation in these academic areas, something that continues to this day.

Here at The University of Manchester, Turing's legacy lives on as future generations of mathematicians and physicists study in a building that bears his name. This latest recognition is richly deserved and a fitting tribute to one of the greatest scientists of the 20th Century.

Professor Dame Nancy Rothwell



The Alan Turing Institute was created as the national institute for data science in 2015, adding artificial intelligence to their remit in 2017. The institute is a collaborative hub, with roots in universities and centres of research excellence across the UK, and strong links to a growing network of industry, public sector, and third sector partners.

Since 2018 there have been thirteen University partners: Birmingham,

# Turing Innovation Catalyst Manchester

Transform the future, right now. AI is the world's fastest growing deep digital tech sector. Its infinite possibilities are set to transform our collective future, but right now is the moment to write yours.

Turing Innovation Catalyst Manchester empowers you to do just that. Set to launch in 2023, our focus will be on commercialising and accelerating AI, deep digital tech, and digital trust technologies.

The Turing Innovation Catalyst Manchester is led by The University of Manchester, working with business, academic and public sector organisations. The project aims to accelerate Greater Manchester's digital economy by supporting existing start-ups and creating new ones, especially in the field of artificial intelligence. It will also help to develop skills in the region, with a particular focus on women and under-represented groups in the industry.

This will bridge the gap between cutting-edge research and business, and will have centres across the region from which to coordinate activity. The project aims to position Greater Manchester at the forefront, which will have a transformative effect on the regional economy and jobs.



AI is the world's fastest growing deep digital tech sector. Its infinite possibilities are set to transform our collective future, and right now you can get involved as part of Turing Innovation Catalyst Manchester. Set to launch in 2023, our focus will be on commercialising and accelerating AI, deep digital tech, and digital trust technologies.

- An ambitious programme of activity
- Human connections in a technology hub.
- A serious boost for businesses
- A diverse community.
- Establishing Manchester's place on the AI map.



# Manchester Centre for AI Fundamentals

The University of Manchester's new Centre for AI Fundamentals is a key component of a number of significant recent investments. The University of Manchester has made into AI education, innovation and industrial collaboration.

We boldly focus on fundamental AI research, which includes probabilistic modelling, deep learning, reinforcement learning, causal modelling, human-in-the-loop/AI, explainable AI, ethics, privacy and security.

This centre brings together renowned academic expertise in AI with the latest research taking place across our growing institutes.

These include: The Institute for Data Science and AI (IDSAI), The Christabel Pankhurst Institute and our partnerships with The Alan Turing Institute and the European Laboratory for Learning and Intelligent Systems (ELLIS).

The University has already recruited a number of key staff to the new centre for AI Fundamentals, including lecturers and researchers, and there are a number of further vacancies currently being advertised. For further information on these, please use the QR code below.

To find out more about the Manchester Centre for AI Fundamentals visit [manchester.ac.uk/un-ai](http://manchester.ac.uk/un-ai)

We need new kinds of AI assistants which can learn to work well with humans and complement their skills. That requires new fundamental AI research, and Manchester has recognised this opportunity and is considerably strengthening its AI research. Manchester is a top-notch place to build and apply new AI which matters and has impact.

Professor Samuel Kaski



# The Christabel Pankhurst Institute

For health technology research and innovation

In 2021, a consortium led by The University of Manchester launched the Christabel Pankhurst Institute for Health Technology Research and Innovation. This new multimillion pound institute is building on Manchester's academic strengths in digital health and advanced materials to discover innovative health and care solutions.

This institute is part of an ambitious plan set out in the Greater Manchester (GM) Local Industrial Strategy to boost the city-region's provision in this area.

The initiative will build on investments from the University, Manchester Science Partnerships (MSP), the Engineering and Physical Sciences Research Council (EPSRC), and The Alan Turing Institute, creating a total budget of more than £25m.

The institute has recently moved into a flagship building at the centre of the University's campus. This location and partnership will provide support for business growth by facilitating better collaboration between the NHS, researchers and industry through MSP, MFT, Health Innovation Manchester and the University.

To find out more, visit [pankhurst.manchester.ac.uk](http://pankhurst.manchester.ac.uk)

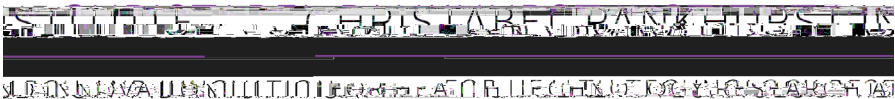
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Health and scientific innovation is needed now more than ever, so it is terrific news that we can support the launch of The Christabel Pankhurst Institute in Greater Manchester.

The launch will see The University of Manchester continue to be a pioneer in digital health. It will come as a boost to the business sector by creating employment opportunities, at the same time as delivering further long-term health benefits to our city-region.

Andy Burnham,  
Mayor of Greater Manchester

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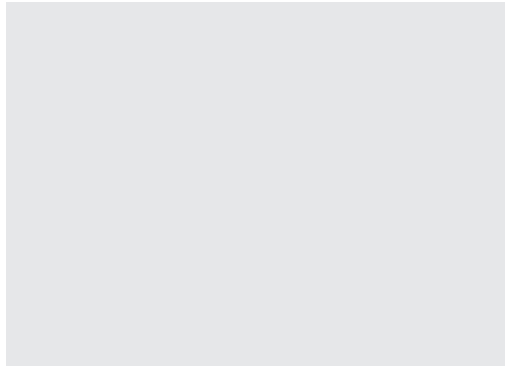


The University's Centre for Robotics and AI pulls together experts and projects from across the academic disciplines who share

The European Laboratory for Learning and Intelligent Systems (ELLIS) has added The University of Manchester as a partner of its global members who strive towards a meaningful contribution to securing Europe's sovereignty and leadership in the research field of modern artificial intelligence (AI).

Four new international units have been announced including; Manchester, Jena and Stuttgart in Germany and Milan in Italy. The new units join a network of world-class institutions across 14 European countries and Israel.

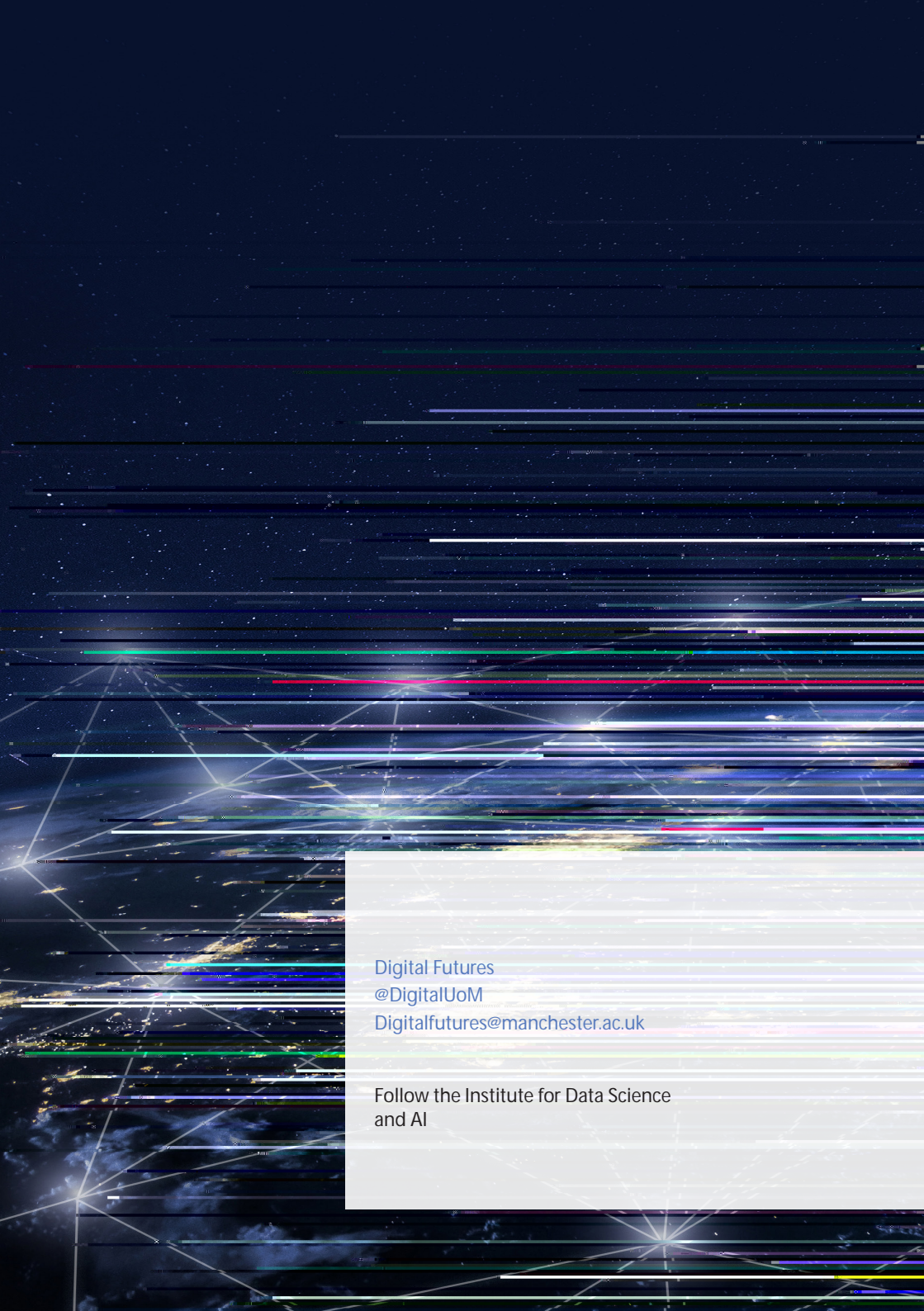
The University of Manchester has recently strengthened its position as a centre for research into AI







The University of Manchester  
Digital Futures



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Follow the Institute for Data Science  
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