

The Alan Turing Institute

Senior Research Fellow for Machine Learning and AI in Agriculture (Secondment)

THE ALAN TURING INSTITUTE

There has never been a more significant time to work in data science and AI. There is recognition of the importance of these technologies to our economic and social future: the so-called fourth industrial revolution. The technical challenge of keeping our data secure and private has grown in its urgency and importance. At the same time, voices from academia, industry, and government are coming together to debate how these technologies should be governed and managed.

The Alan Turing Institute, as the UK's national institute for data science and artificial intelligence, plays an important part in driving forward advances in these technologies in order to change the world for the better.

The Institute is named in honour of Alan Turing, whose pioneering work in theoretical and applied mathematics, engineering and computing is considered to have laid the foundations for modern-day data science and artificial intelligence. The Institute's goals are to undertake world-class research, apply its research to real-world problems, driving economic impact and societal good, lead the training of a new generation of scientists, and shape the public conversation around data and algorithms.

After launching in 2015 with government funding from EPSRC and five founding universities, the Institute has grown an extensive network of university partners from across the UK and launched a number of major partnerships with industry, public and third sector. Today it is home to more than 500 researchers, a rapidly growing team of in house research software engineers and data scientists and a business team.

BACKGROUND

The Alan Turing Institute is expanding its research into the application of machine learning and AI to agricultural data, building on a previous two-year programme on the Impact of Climate Change on UK Agriculture. As part of this the Institute is aiming to strengthen its existing links to agricultural research institutions, such as Rothamsted Research, the John Innes Centre, and the UK Centre for Ecology and Hydrology, and to build links with new partners in this area. Among the priorities of this research programme are the development of digital twins for agriculture, large-scale models of crop-yield prediction, crop phenotyping approaches, sustainable agriculture, and livestock monitoring.

ROLE PURPOSE

The Alan Turing Institute is recruiting a Senior Research Fellow who would be seconded from their home institution (part-time) in order to lead efforts in line with the priorities outlined above, to develop collaborations, and to develop funding bids to support large collaborative projects.

DUTIES AND AREAS OF RESPONSIBILITY

- Bring together relevant agricultural researchers across the UK in workshops to identify collaboration opportunities with the Alan Turing Institute
- Lead on the development of funding bids for the application of machine learning and AI to agriculture, and digital twins for agriculture
- Act as principal investigator, should these bids be successful, and lead a team of Research Associates
- Disseminate findings through peer-reviewed articles and at seminars, workshops, and conferences.
- Contribute to the national and international landscape of research and applications

The Alan Turing Institute

- Liaise with funding bodies and provide information to project stakeholders and represent the research group at external meetings/seminars, either with other members of the team or alone.
- Carry out collaborative projects with colleagues in partner institutions, and research groups.

In particular the Senior Research Fellow will:

- Build links between ATI, Rothamsted, and other agricultural research institutions
- Explore the potential of digital twins for agriculture, from the farm level to the national level
- Investigate integration of agricultural data across scales, from plants to drone and satellite data
- Build upon existing projects and large-scale datasets at ATI on crop yield prediction, soil type, land use, weather, and remote sensing, with potential applications of ML/AI
- Develop further opportunities for the application of ML/AI to large agricultural datasets
- Explore the potential of machine learning approaches for the development of sustainable agriculture

OTHER DUTIES

- Teaching may be required as part of collaboration work

Please note that job descriptions cannot be exhaustive, and the postholder may be required to undertake other duties, which are broadly in line with the above key responsibilities. This job description is written at a specific time and is subject to changes as the demands of the Institute and the role develop.

The Alan Turing Institute

PERSON SPECIFICATION		
Skills and Requirements Post holders will be expected to demonstrate the following:	Essential (E) Desirable (D)	Tested at application (a) Tested at interview (i)
Education/Qualification		
PhD degree in Natural Science, Mathematics, Computer Science	E	A
Knowledge and Experience		
Programming experience including machine learning, AI, data science	E	A
Experience processing and analysing large scientific datasets	E	A, I
Research experience formulating and pursuing scientific research questions	E	A, I
Research experience in the application of ML/AI to agricultural data	E	A, I
Track record of excellent academic publications	E	A, I
Ability to creatively solve problems, working both independently and with other team members	E	A, I
Experience working with funding bodies and research budgets	E	A, I
Experience relating to collaboration with colleagues in partner institutions, and research groups.	E	A, I
Ability to create an innovative and creative environment for research	E	A, I
Communication		
Good written and oral communication skills, presenting research in publications and talks	E	A, I
Proven ability to communicate complex, specialist or conceptual information/research findings clearly and persuasively to diverse audiences.	E	A, I
Teamwork and Motivation/Team Development		
Ability to work in a team, and to take initiative	E	A, I
Ability to lead a large project with responsibility for developing and communicating action plans and objectives linked to organisational strategy.	E	A, I
Experience of managing workforce and/or financial planning in response to current and future needs	D	A, I
Line Management experience including performance management and appraisals	D	A, I
Liaison and Networking		
Ability to seek out and build collaborations within Turing and with external partners	E	I
Planning and Organising		
Ability to plan workshops, tutorials, and events	D	A, I
Analysis and Research		
Good analysis skills to formulate and address research questions	E	I
Reports findings to wider community and is able to withstand challenge by relying on evidence gathered and processes used for analysis.	E	A, I

The Alan Turing Institute

Expert in data gathering and analysis, able to develop hypotheses to explain results and confidently present findings.	E	A, I
Teaching and Learning		
Ability to lead tutorial and teaching events related to tools and methods developed	D	A, I
Other Requirements		
Commitment to EDI principles and to the Organisation values	E	I

The Alan Turing Institute

OUR VALUES

The Alan Turing Institute is committed to equality diversity and inclusion and to eliminating discrimination. All employees are expected to embrace, follow and promote our [EDI Principles](#) and Our Values.

Our values

- Trust**
We create an environment where we have trust and can be trusted
- Inclusivity**
We expect our Turing community to contribute to a culture that is inclusive and free of barriers
- Respect**
We all have different roles, priorities and challenges but our shared purpose is the same
- Leadership**
Leadership is everyone's business; Turing leaders set the right tone and lead by example
- Transparency**
Everyone should understand the how and the why of our decisions and actions
- Integrity**
We are all ambassadors for the Turing's mission of changing the world for the better

APPLICATION PROCEDURE

If you are interested in this opportunity, please click the apply button below. You will need to register on the applicant portal and complete the application form including your CV and covering letter. If you have questions about the role or would like to apply using a different format, please contact us on 020 3862 3533 or 0203 862 3516, or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: Sunday 18 June 2023 at 23:59

TERMS AND CONDITIONS

This part time 0.5 FTE post is offered on a fixed term basis until June 2025. The annual salary is £66,150 - £71,663 pro rata plus excellent benefits, including flexible working and family friendly policies, <https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits>

EQUALITY, DIVERSITY AND INCLUSION

The Alan Turing Institute is committed to creating an environment where diversity is valued and everyone is treated fairly. In accordance with the Equality Act, we welcome applications from anyone who meets the specific criteria of the post regardless of age, disability, ethnicity, gender reassignment, marital or civil partnership status, pregnancy and maternity, religion or belief, sex and sexual orientation.

We are committed to building a diverse community and would like our leadership team to reflect this. We therefore welcome applications from the broadest spectrum of backgrounds

Please note all offers of employment are subject to obtaining and retaining the right to work in the UK and satisfactory pre-employment security screening which includes a DBS Check.

Full details on the pre-employment screening process can be requested from HR@turing.ac.uk.