

The Alan Turing Institute

SENIOR RESEARCH ASSOCIATE, Machine Learning for Environment and Sustainability

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 purpose is to make great leaps in data science and AI research to change the world for the better. Its goals are to advance world-class research and apply it to national and global challenges, build skills for the future by contributing to training people across sectors and career stages, and drive an informed public conversation by providing balanced and evidence-based views on data science and AI.

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

Currently, Turing is undergoing a restructuring, moving towards a challenge-led model with three Grand Challenges (Environment & Sustainability, Health, Defence & National Security), underpinned by cross-cutting Fundamental Research. This new Turing 2.0 model focuses on world-class science and innovation and aims to generate high-quality research and translate it into real-world impact and deployment.

In the Environment & Sustainability Grand Challenge, we will use machine learning and AI as a transformative technology to benefit planet and people. Initially the Grand Challenge will centre around using machine learning and AI for:

1. Weather modelling and forecasting (e.g., data assimilation, forecasts, downscaling, end-to-end forecasting).
2. Sea-ice modelling.
3. Modelling and forecasting of renewables, e.g., wind/solar.
4. Nuclear fusion.

We are seeking highly skilled Senior Research Associates for these areas with expertise in machine learning, AI, statistics, and one of the four application domains specified above. The primary purpose of these roles is to conduct internationally leading research. You will be part of a collaborative, multidisciplinary team, and work with external partners to help bring your research to deployment. You are expected to engage with internal and external stakeholders and collaborators to support research progress and deployment.

ROLE PURPOSE

The Senior Research Associates will be key to conducting internationally leading research in machine learning for the research areas listed above. This role will be part of the Environment & Sustainability Grand Challenge, and you will be reporting to the project/mission lead and work closely with other Senior Research Associates, PhD students and interns within the same area. It may be necessary to manage a small group of PhD students and other early-career members of the team.

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DUTIES AND AREAS OF RESPONSIBILITY

- Conduct excellent research
- Provide technical leadership for research projects, ensuring successful outcomes
- Liaise with stakeholders and colleagues to understand and prioritise project goals
- Contribute to mission-led research in collaboration with team members and Principal Investigators (PIs).
- Be a point of contact, supporting PIs in engaging with stakeholders regarding projects and deputising in meetings where necessary.
- Take the lead on writing up findings as they emerge, producing and developing reports, and publications in peer-reviewed journals, in collaboration with the research team.
- Lead on the preparation of proposals and applications to external bodies, e.g., for funding and contractual purposes.
- Present, disseminate and explain our work at meetings/events and contribute to both the internal and external visibility of the Institute.
- Take responsibility for driving collaboration with academic experts and broader research partners from across the Turing, and the wider Turing / project community.
- Supervise the work of early-career researchers in the team and provide guidance as required
- Line manage direct reports if required
- Contribute to the life of the Institute and support a diverse and inclusive community through embracing the Turing values.
- Adhere to and promote principles of reproducible and ethical data science and ensure secure handling of data and health and safety in all aspects of work.

Specific requirements for the role:

- Play a leading role in undertaking high-quality research, actively contributing, and steering the broader research aims of the Environment & Sustainability Grand Challenge.
- Be experienced in machine learning and AI in one of the four areas listed above
- Analyse data and write computer code
- Publish papers at relevant venues
- Engage with stakeholders to ensure that research outcomes can be deployed in the real world.

OTHER DUTIES

- Travel may be necessary to meet the requirements of the role
- 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.

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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 | | |
| A PhD (or equivalent experience and/or qualifications) in a relevant area, e.g., machine learning, AI, computer science, mathematics, statistics, physics, engineering, environmental science. | E | A |
| Knowledge and Experience | | |
| Experience in machine learning, programming | E | A/I |
| Experience in modelling of complex environmental and/or sustainability systems e.g. weather, sea ice, renewables, nuclear fusion | D | A/I |
| Substantial research experience in their field of expertise with commensurate output | E | A/I |
| Evidence of high-quality publication(s) in a relevant field commensurate with your career stage | E | A |
| Experience in scoping and investigating independent research questions within a given overarching theme | D | A/I |
| Experience in line management | D | A/I |
| Previous experience overseeing and supervising more junior colleagues' work | D | A/I |
| Communication | | |
| Excellent written and verbal communication skills including the ability to present complex or technical information, and to communicate effectively with diverse audiences | E | A/I |
| Analysis and Research | | |
| Ability to carry out research independently and take the lead on research direction in collaboration with the PIs | E | A/I |
| Project Management & Project Delivery | | |
| Ability to initiate, plan and prioritise research projects and ensure effective use of research resources | D | I |
| Proactive approach to managing stakeholders and their requirements and identifying opportunities for collaboration | D | A/I |
| Wiling to seek opportunities to make improvements and be proactive in identifying sources of funding/income | D | A/I |
| Teamwork and Motivation | | |
| Ability to work effectively both as part of a team and in cross collaboration with other teams as required by the role | E | I |

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| Decision-Making Processes and Outcomes | | |
|---|---|-----|
| Ability to advise on available options for decisions that affect operational processes, considering any risks | D | I |
| Other Requirements | | |
| Commitment to EDI principles and to the Organisation values (outlined below) | E | A/I |

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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.

The covering letter should address:

- Why you are applying for this position
- How you qualify for this position (see criteria under "Person Specification")
- A concrete research project (within the scope of this position) you would like to pursue (max. 2 pages plus references)
- Publication list (if not covered in CV)

If you have questions about the role or would like to apply using a different format, please contact us on 020 3862 3335 or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: Sunday 15 September 2024 at 23:59 (LONDON, UK BST)

Interviews are expected to take place from week commencing 30 September 2024.

TERMS AND CONDITIONS

This post is offered on a full time, fixed-term basis for 3 years. Part-time (0.8 FTE) applications can be considered. The annual salary is £55,184 to £63,971 plus excellent benefits, including flexible working and family friendly policies, [Employee-only benefits guide | The Alan Turing Institute](#)

The Turing operates a hybrid model. We would ideally like the successful candidate to be in our office (London) 3 days per week.

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.

We are committed to making sure our recruitment process is accessible and inclusive. This includes making reasonable adjustments for candidates who have a disability or long-term condition. Please contact us at adjustments@turing.ac.uk to find out how we can assist you.

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.