

The Alan Turing Institute

Research Assistant, Equitable AI

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 successful candidate will conduct active research across projects within the multi-disciplinary Decentralisation and Democratization of Technology challenge in the [Finance and Economics Programme](#). The programme brings together leading experts in data science, machine learning, finance, and the social sciences, from both academia and industry to tackle the most challenging questions by producing world-leading research with significant impact. The programme is led by the Programme Director, Lukasz Szpruch.

The role will focus on developing solutions to support fair use of AI. The candidate will work closely with the Principal Investigators, the Technical Development Manager, other PDRAs and programme management staff across the team.

ROLE PURPOSE

When AI is incorporated into public infrastructure, results can be a highly efficient and user-centric ecosystem, however, it can also raise significant ethical and privacy concerns due to the potential sensitivity of the data in use. The potential for bias in AI algorithms, coupled with the risks associated with data privacy and security, poses a significant threat to objectives that aim to benefit the community relying upon those services. To mitigate this requires the establishment of stringent ethical guidelines, transparent AI governance frameworks, and robust data protection laws in order to build public trust in AI-enabled services.

This role will focus on identifying technical use cases and developing solutions that help address AI related issues that are attributed to hindering the progression of digital public infrastructure solutions, specifically for Digital Identity. The successful candidate will undertake evaluation, and further development, of best practices to address key areas that can improve the use of AI in an equitable way, these include explainability, fairness metrics, data augmentation, adversarial training human-in-the-loop and the creation of synthetic data.

The post holder will support the research team in exploring concepts in focus but will have experience in the development of software solutions and AI/ML. They will be responsible for specific outputs including a tool for static code analysis that can monitor deep learning projects to analyse potential fairness issues, and via a graphical user interface, support developers explore bias and see the current issues.

The Alan Turing Institute

The role holder will also support the collaboration with project partners to establish where AI can enhance products in an equitable manner. Areas including the automation of verification and validation of user credentials, and, the delegation, retraction of AI consent from users, will be explored and solutions developed to test concepts. Software prototypes will be developed as part of this exercise, under guidance of the project lead investigators, the role holder will be instrumental in the development of solutions. The post holder will be required to travel within the UK and internationally.

DUTIES AND AREAS OF RESPONSIBILITY

- Scope, pilot and deliver high-quality independent research activity under the direction of the Principal Investigators and Technical Development Manager and contribute to the broader research aims and challenges.
- Develop prototype software solutions that support the objectives of achieving equitable AI.
- Support relationship building, drive collaboration and engage with the broader Turing community and external project stakeholders on a regular basis, and if required project funder.
- Present, disseminate and explain technical topics to colleagues, external partners, and broader community by preparing and presenting reports, blog posts, organising and delivering presentation at internal and external events, and taking an active role in meetings and discussions.
- Publish – as a lead or co-author – peer reviewed articles detailing project's research outputs and/or project case-studies, including reports and opinion or commentary articles, as appropriate.
- Undertake appropriate administration tasks, as required.
- Travel nationally and internationally, as required.
- Contribute to the life of the Institute, and support and help develop its community.

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.

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 master's degree or equivalent experience in Mathematics, Computer Science, or closely related discipline.	E	A
Knowledge and Experience		
Extensive knowledge of AI and machine learning techniques, as well as awareness of their limitations and the risks associated in their use.	E	A, I
Ability to inspect and analyse the deep learning application codes written in different frameworks (e.g. Pytorch, Tensorflow)	E	A, I
Experience with software development, including visual interface development (e.g. VSCode Extension Design, CLI tool development)	E	A, I
Experience of data analysis and developing programs in software such as R or Python. This may have been gained in commercial or industrial environments, as well as through production of academic papers.	E	A, I
Ability in mathematical or quantitative methods.	E	A, I
Experience in publishing research papers, code libraries and technical reports.	D	A, I
Experience of working independently and in medium to large-scale teams, on collaborative and interdisciplinary research projects with academic and industrial partners. Dealing with users in the real world will be very important.	D	A, I
Communication		
Excellent written and verbal communication skills with the ability to clearly communicate complex, specialist, or conceptual information/research findings clearly and persuasively to diverse audiences. This will include the ability to explain technical concepts to technical and non-technical audiences.	E	I
Ability to write research reports and papers in styles accessible to both academic and lay audiences.	D	I
Teamwork and Motivation		
An ability to collaborate successfully in a multidisciplinary environment across different levels of seniority.	E	A, I
Liaison and Networking		
Participates in networks within the organisation or externally to share knowledge and information in order develop practice or help others learn.	E	A, I
Planning and Organising		

The Alan Turing Institute

Ability to work flexibly, prioritising tasks to meet deadlines and maintaining a high standard and attention to detail.	E	A, I
Analysis and Research		
Ability to organise working time, take the initiative, and carry out research independently, under the guidance of the PI.	E	I
Ability to use own judgement to analyse and solve problems.	E	I
Other Requirements		
Commitment to EDI principles and to the Institute's 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 at recruitment@turing.ac.uk

CLOSING DATE FOR APPLICATIONS: Sunday 21 April 2024 at 23:59

TERMS AND CONDITIONS

This full-time post is offered on a fixed term basis for 12 months. The annual salary is £40,148 plus excellent benefits, including flexible working and family friendly policies, <https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits>

We reserve the right to close this vacancy early or to interview suitable candidates before the closing date if enough applications are received.

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.

Reasonable adjustments to the interview process will be made for any candidates with a disability.

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.