Research Associate, Fraud Management for Identity Systems

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

The successful candidate will work on the **Trustworthy Digital Infrastructure for Identity Systems** programme. They will work closely with the Principal Investigators, the Technical Development Manager, other PDRAs and programme management staff across the team. The project aims to enhance the privacy and security of national digital identity systems, with the ultimate foal to maximise the value to beneficiaries, whilst limiting known and unknown risks to these constituents and maintaining the integrity of the overall system. This multidisciplinary project and its efforts focus on the communities within developing economies and their adoption of identity systems.

The project and role sit within the **Finance and Economics Programme** which 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.

ROLE PURPOSE

The provision of digital infrastructure for identity systems is an emerging requirement in many modern societies across the developed and developing world. New techniques for deployment at scale promise to improve the assurance of users' rights to access to various digital and physical resources, in a cost effective and efficient manner. However, protecting citizens' rights when such systems are deployed requires the development of novel and appropriate socio-technical interventions that incorporate robust security and privacy measures.

This role focuses on research into vulnerabilities within digital identity systems and the development of solutions for their management and mitigation. Both behavioural and biometric criteria will be investigated to fully understand how fraudulent activity can impact the trustworthiness of digital identity systems. The successful candidate will primarily focus on developing fraud detection methods that will combat issues including system attacks that rely on deepfakes. They will also address the wider scope of fraudulent activities that typically lead to financial loss to users and owners of digital ID. Key to this role is collaboration with country and development partners to create a suite of Digital Public Goods, including use-cases and prototype software, to support the development of best practices in fraud management for identity systems.

This role will also support the undertaking of an evaluation and further development of best practice and solutions for AI in identity by addressing key areas including explainability, fairness metrics, data augmentation, adversarial training, human in the loop and synthetic data.

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DUTIES AND AREAS OF RESPONSIBILITY

General duties for Research Associate posts

- Publish and disseminate high-quality research papers and publications detailing research outputs and project case-studies.
- Cultivate strong relationships with internal stakeholders, liaising with teams across the Turing as required.
- Communicate or present research outputs to diverse stakeholders, through conferences, events, meetings, and press opportunities as appropriate.
- Participate in internal meetings with relevant groups, stakeholders, as well as external meetings with representatives of industry and potential partner organisations
- Work collaboratively with academic experts and broader research partners from across the Turing and the wider Turing community.
- Undertake required administration tasks.
- 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 to the project/programme/role:

- Undertake high-quality research, contributing to the broader research aims of the Trustworthy Digital Infrastructure for Identity Systems programme.
- Take initiatives in the planning and execution of research, and identify and develop suitable techniques, and apparatus, for the development and implementation of the existing programmes.
- Conduct data analysis and ensure the validity and reliability of data at all times. This will also include maintaining accurate and complete records of all findings.
- Continuously update your knowledge concerning the digital identity ecosystem, this includes staying up to date with the news, emerging policy, and regulation.
- Support the Principal Investigators (PIs) and Technical Development Manager in the design and development of the research programme and provide advice on best practice surrounding network building in the digital identity ecosystem. This also involves working closely with the research teams to represent and advocate for needs of those within the ID community.

OTHER DUTIES

- International travel may be necessary to meet requirements of the role.

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		
A PhD (or equivalent experience and/or qualifications) in a relevant area which will include Mathematics, Computer Science or similar inter-disciplinary subjects.	E	A
Research Assistant level: must be near completion of PhD in a relevant area which will include Mathematics, Computer Science or similar inter-disciplinary subjects.	E	A
Knowledge and Experience		
Knowledge of AI and machine learning techniques.	E	A/I
Knowledge of synthetic data generation techniques.	E	A/I
Knowledge of digital identity systems.	E	A/I
Experience of data analysis and developing programs in software such as R or Python. This may have been gained in commercial environments, as well as through production of academic papers.	E	A/I
Experience in publishing research papers, code libraries and technical reports. Publications must be in the area of mathematics, AI / ML, synthetic data generation and challenges associated with digital identity.	E	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
Communication		
Excellent written and verbal communication skills including the ability to present complex or technical information, and to communicate effectively with other stakeholders outside the research community	E	A/I
Ability to adapt the style of communication to the audience and ensure understanding	E	A/I
Liaison and Networking		
Ability to collaborate successfully with colleagues in a multidisciplinary environment within the organisation/externally to share knowledge and information in order develop practice or help others learn	E	A/I
Willing to contribute to discussions and make decisions as part of a team, and across teams, providing support to others as required, with an approachable and flexible attitude towards work	E	A/I
Willing to represent the Turing at events and external meetings	E	I
Decision-Making Processes and Outcomes		

Ability to lead one's own work, including planning and execution, and to prioritise work to meet deadlines	**E**	**A/I**
Ability to independently make decisions which are low risk and that mainly affect themselves or a small number of people and are guided by regulation and practice	**E**	**I**
Able to consider possible solutions and identify with evidence those which offer the widest benefits	**E**	**I**
Analysis and Research		
Ability to take the initiative, and carry out research independently or collaboratively under the guidance of the PI	**E**	**A/I**
Able to work with supervisors to plan, co-ordinate and implement research activity, including managing research resources	**E**	**A/I**
Ability to keep accurate and up to date knowledge of services available in own and related areas of work	**E**	**A/I**
Teaching and Learning		
Teaching may be required as part of the role	**E**	**A/I**
Other Requirements		
The post holder may be required to travel within the UK and internationally.	**D**	**I**
Commitment to EDI principles and to the Organisation values (outlined below)	**E**	**I**

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 3536 or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: SUNDAY 28TH JULY 2024 AT 23:59 (LONDON, UK BST)
We reserve the right to close this vacancy early or to interview suitable candidates before the closing date if enough applications are received.

TERMS AND CONDITIONS

This full-time post is offered on a fixed term basis until 31 December 2026. The annual salary is £44,180 plus excellent benefits, including flexible working and family friendly policies, https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits

Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant at a salary of £41,352 per annum.

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*.*