

The Alan Turing Institute

SENIOR DATA SCIENTIST, PARTNER INTEGRATED

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 Turing has several teams within the Defence and Security Programme, based in **Cheltenham** and **London** which focuses on delivering real-world impact to enhance the security of the nation. Following in the footsteps of the institute's namesake, Alan Turing, the team operates at the intersection of mathematics, engineering and computing and works in close collaboration with the Turing's National Security partners. They enable the UK's security community to draw on the very best of academia to achieve high impact solutions to the most pressing challenges in the field.

These teams bring together cutting-edge research and motivating mission challenges, using our data science, software engineering and stakeholder management skills to create next generation capabilities for our partners. Day to day, we collaborate with technical and subject matter experts from our partner organisations as well as academics, software engineers, and data scientists from across the Turing's research community. We present our work to a range of audiences including research colleagues, senior decision makers and non-technical stakeholders. We work with state-of-the-art cluster and cloud platforms to realise our collaborators' data science and artificial intelligence research at scale.

ROLE PURPOSE

Turing Data Scientists in the Defence and Security Programme understand the latest breakthroughs in Machine Learning and work to apply them to Defence and Security challenges. Data Scientists perform investigations based on tasking from D&S partners to derisk new technologies and create proof-of-concept work. Investigations often involve understanding whether a new algorithm is suitable for a particular problem, how academic technology performs when applied in real-world situations, and what the potential drawbacks of adopting a new technology are.

Integrated Data Scientists will spend part of their time on partner sites, working alongside partner data scientists. The classified nature of this work means that Turing Integrated Data Scientists must achieve security clearance.

Integrated Data Scientists will spend three days a week working with their Turing colleagues on data science projects. Work is done in collaboration with other team members. Senior Data Scientists are expected to provide support and consultancy to more junior team members, as well as providing technical leadership on their team projects. Two days a week will be spent on a partner site, understanding the projects that partner data scientists face, and collaborating with

The Alan Turing Institute

them to identify the most suitable ML tools, or develop new ones. Previous knowledge of Defence and Security is not required, however Integrated Data Scientists are customer-facing, and so require communication and collaboration skills.

20% time is provided to allow Data Scientists to keep their Machine Learning and programming skills up to date. Data Scientists choose what they would like to do in their 20% time, and budget is available to pay for courses and conferences.

DUTIES AND AREAS OF RESPONSIBILITY

- Engage with data scientists from Turing's Defence and Security Programme's partners to learn their aims and requirements, and understand and identify problems they face
- Apply state-of-the-art Machine Learning and Data Science techniques emerging from the Institute, broader academia and industry to problems faced by the partners, both as part of Turing led projects and on partner systems
- Perform rigorous investigations into new algorithms and applications, providing consultancy to inform our Partners' decisions and developing high-quality proof-of-concept outputs which can be deployed in real-world situations
- Design and carry out rigorous experimentation and development with some guidance from Principal staff, both alone and in small teams, coaching junior team members and guiding collaborations to success
- Present, disseminate and explain our work via presentations, reports and workshops
- Provide technical project management and leadership for research projects, ensuring successful outcomes; Liaise with clients and colleagues to understand and prioritise project goals, and balancing client value with research outputs;
- Take ownership of a particular domain challenge area or methodology for the group.
- Develop new projects in conjunction with colleagues, authoring research proposals and agreeing involvement for the group in activities across the institute.

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



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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		
Experience in a field with significant use of both computer programming and advanced statistical or numerical methods, evidenced by <ul style="list-style-type: none"> · a PhD degree; or · equivalent professional experience 	E	A
Knowledge and Experience		
Professional experience in a field or sector with significant use of both computer programming and advanced algorithmic, statistical or numerical techniques	E	A/I
Fluency in one or more modern programming languages used in data science. In particular, we predominantly work in Python, but demonstrable use of other programming languages (e.g. modern C++, Java, Scala, Julia, R, Javascript, Rust, Go) together with a facility for learning new languages	E	A/I
An understanding of the importance of good practices for producing reliable software and reproducible analyses (e.g. version control, issue tracking, automated testing, package management, literate analysis tools such as Jupyter)	E	A/I
Experience leading a project to a successful conclusion	E	A/I
Experience working with customers to identify, understand and refine problems, scoping data science work to solve them	D	A/I
Experience working with one or more established deep learning libraries (e.g. PyTorch, Tensorflow, Jax)	D	A/I
Experience managing, structuring, and analysing research data as well as experience managing and organising the parameters and results of computational experiments	D	A/I
Communication		
Excellent written and verbal communication skills, including experience in the authoring of research papers or technical reports, and giving presentations or classes on technical subjects	E	I
Ability to represent the views of the Turing while discussing projects with Partners	E	I
Project Management & Project Delivery		
Ability to work effectively as part of a remote team, with collaborators and customers	E	A/I
Decision Making		
Independently makes decisions which are low risk and that mainly affect themselves or a small number of people and are guided by regulation and practice	E	A/I

The Alan Turing Institute

Initiative and Problem Solving		
Demonstrated enthusiasm and ability to rapidly assimilate new computational and algorithmic ideas and techniques on the job, at a more than superficial level, and apply them successfully	E	A/I
Ability to use own judgement to analyse and solve problems	E	A/I
Ability to lead one's own work independently, including planning and execution	E	A/I
Analysis and Research		
Experience managing, structuring, analysing and visualising research data and the results of computational experiments	E	A/I
Ability to adopt appropriate data analysis methods for the purpose, and produce simple reports to present the findings	E	A/I
Team Development		
Ability to support and demonstrate routine procedures to new team members	E	I
Other Requirements		
Commitment to EDI principles and to the Organisation values	E	I
Must be eligible to hold a UK Developed Vetting (DV) clearance and secure DV clearance within 6 months of the commencement of their employment, or in such longer period as the Institute may in its absolute discretion consider reasonable to obtain such clearance	E	A

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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 (maximum 3 pages, no photo) and covering letter (maximum 2 pages) telling us:

- Your past experience working with code and/or data
- Why you would like to become part of the Turing's Defence and Security Programme?
- How your skillset would complement the activities of the team.

If you wish to share links to blog posts, public code repositories or research papers containing work that you have made significant contribution to, please add a link to those in your cover letter.

As these roles require Developed Vetting (DV) clearance, you are required to include the following information as part of your cover letter;

- Your current nationality
- Your nationality at birth
- Other nationality (include dual nationality if applicable)
- Confirmation that you have been residing in the UK for the past 5 years (if you haven't, please provide details of when and where you resided and the reason)
- Country where you were born
- County in which you were born
- Town where you were born

Please note, if these details are not provided we will be unable to progress with your application.

For questions about the role and the recruiting process please get in touch with us at recruitment@turing.ac.uk. If you 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 1st October 2023 at 23:59

INTERVIEW PROCESS

All interviews are currently held remotely, and we operate a two-stage interview process. If you are successful at the screening stage, you will be asked to attend the first interview via video call. In this interview, you will be expected to give a ten-minute presentation explaining code you have written that:

- demonstrates an algorithm or technique that you consider interesting in machine learning; and/or
- illustrates your use of good research software engineering practices in a machine learning domain.

Existing examples of work are encouraged as long as the code was substantially written by you. You should be prepared to answer questions about both the code and the research challenge it addresses or the algorithm it demonstrates. Any source code shared for the interview will be treated in the strictest of confidence.

The second interview is usually held about one week later for successful candidates. This interview focusses on your previous experience and competencies for the role. There will also be a scenario-based discussion with the interview panel.

In both interviews, there will be the opportunity to ask questions about the role and the team.

TERMS AND CONDITIONS

This full time post is offered on a full time, fixed term basis until March 2025. The annual salary range is £ 51,476 - £58,800 plus excellent benefits, including flexible working and family friendly policies, <https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits>

Should the appointed candidate currently hold a DV clearance, a security clearance allowance will be applied, or upon the successful completion of DV clearance.

To be eligible to apply, you must be a British Citizen.

Obtaining and holding a Developed Vetting (DV) clearance will be an essential requirement for this role. Candidates will either hold a DV clearance at application stage or apply for DV clearance upon appointment, and secure DV clearance within 6 months of the commencement of their employment, or in such longer period as the Institute may in its absolute discretion consider reasonable to obtain such clearance. Eligibility criteria and further information on the

process can be found on the UK Government security vetting website: [National security vetting: clearance levels - GOV.UK \(www.gov.uk\)](#).

Candidates who are not granted, or unable to hold DV clearance will be ineligible to undertake this role.

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. Successful candidates must undergo a criminal record check and meet the security requirements before they can be appointed. The level of security needed is Developed Vetting.

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