

# The Alan Turing Institute

## DATA SCIENTIST

### 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 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 Applied Research Centre (ARC) is a team based at The Turing which focuses on delivering real-world impact to enhance the security of the nation. It enables 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.

This team works with our partners from across UK Government to turn their data challenges into research questions. We apply cutting-edge research from Deep Learning and related fields to client problems in a readable, reliable, and reproducible fashion. We present conclusions of research and analysis to the research community and partners through presentations, research papers and demonstrations.

### ROLE PURPOSE

ARC Data Scientists understand the latest breakthroughs in Deep 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 to inform future research. 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.

Projects usually last between 3-6 months, and Data Scientists are given the opportunity to work on more than one at once. The projects are exploratory, have high-risk of "failure," and generally output Proof of Concept code and technical write-ups. Work is done with other ARC members or in collaboration with other groups and Partner data scientists.

20% time is provided to allow Data Scientists to keep their Machine Learning and programming skills up to date. Previous knowledge of Defence and Security is not required, and Data Scientists are given the opportunity to learn about D&S challenges through meetings and discussions with Partners.

### DUTIES AND AREAS OF RESPONSIBILITY

- Apply state-of-the-art Deep Learning and Data Science techniques emerging from the Institute, broader academia and industry to problems faced by the ARC partners
- 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

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- Design and carry out rigorous experimentation and development with some guidance from Senior and Principal staff, both alone and in small teams
- Present, disseminate and explain our work via presentations, reports, and workshops

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**

<p align="center"><b>Skills and Requirements</b></p> <p align="center">Post holders will be expected to demonstrate the following</p>	<p align="center">Essential (E) Desirable (D)</p>	<p align="center">Tested at application(a) Tested at interview (i)</p>
<b>Education/Qualification</b>		
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"> <li>• a PhD degree; or</li> <li>• equivalent professional experience</li> </ul>	E	A/I
<b>Knowledge and Experience</b>		
Either practical experience with or demonstrable interest in Deep Learning and adjacent topics	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 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
<b>Communication</b>		
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 negotiate and influence others	E	I
<b>Service Delivery</b>		
Ability to work effectively as part of a remote team, with collaborators and customers	E	A/I
<b>Decision Making</b>		
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
<b>Initiative and Problem Solving</b>		
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
<b>Analysis and Research</b>		

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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
<b>Team Development</b>		
Ability to support and demonstrate routine procedures to new team members	E	A/I
<b>Other Requirements</b>		
Commitment to EDI principles and to the Organisation values	E	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 (maximum 3 pages, no photo) and covering letter (maximum 2 pages) telling us:

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

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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.

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](mailto: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](mailto:recruitment@turing.ac.uk).

**CLOSING DATE FOR APPLICATIONS: Sunday 17<sup>th</sup> September 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 on code you have written that either demonstrates an algorithm that you consider important in data science or illustrates your use of good research software engineering practices.

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 permanent basis. The annual salary is £42,893 - £48,300. We also offer excellent benefits, including flexible working and family friendly policies, <https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits>

**Successful candidates will need to undergo a security check by DSTL's security team.**

*The Alan Turing Institute is based at the British Library, in the heart of London's Knowledge Quarter. We expect staff to come to our office at least 4 days per month. Some roles may require more days in the office; the hiring manager will be able to confirm this during the interview.*

## **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.

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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](mailto:HR@turing.ac.uk).***