

The Alan Turing Institute

Data Scientist or Research Engineer / Senior Data Scientist or Senior Research Engineer, Cheltenham.

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 Defence & Security programme at the Turing is looking to expand a newly formed team of research engineers working on real-world problems aligned with securing the UK. 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.

We are a cross-disciplinary team and encourage applications from both generalists and specialists including those who self-identify as engineers, computer scientists, machine learning practitioners, mathematicians, statisticians or more widely as data scientists or data engineers.

The team practices an agile, experiment-driven approach and values a positive, supportive and collaborative environment in which '*lifelong learning*' is encouraged. We embrace failure as a learning opportunity and necessary precursor to success.

ROLE PURPOSE

Your role will be to bring together cutting-edge research and motivating mission challenges, using expert data science, software engineering and stakeholder management skills to create next generation capabilities for our partners. You will be empowered to take ownership of your work and operate with a high level of autonomy in your role, to deliver measurable impact.

Day to day, you will collaborate with technical and subject matter experts from our partner organisations as well as scholars, engineers, and data scientists from across the Turing's research community, to enhance the applicability of research for mission problems. You will create software that implements research and applies it to our partners' data in a readable, reliable, and reproducible fashion. You will present your work to a range of audiences including research colleagues, senior decision makers and non-technical stakeholders. You will work with state-of-the-art advanced cluster and cloud platforms to realise our collaborators' data science and artificial intelligence research at scale.

This role will be based at the hub8 working space in Cheltenham.

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DUTIES AND RESPONSIBILITIES

Successful candidates will:

- Understand the problems of the Turing's partners, and develop appropriate approaches to solving these problems.
- Perform experiments and develop capabilities, which might include: building and deploying machine learning models; applying data science, statistical and algorithmic techniques to data; building microservices, data processing/engineering systems and platforms or developing user interfaces and/or visualisations.
- Develop, implement and adapt state-of-the-art and novel data science and artificial intelligence techniques emerging from the Institute and elsewhere to problems faced by the Turing's partners.
- Present, disseminate and explain our work including: Documenting capabilities, processes and systems for effective and efficient reuse across multiple domains; Presentation at Defence and Security programme events including monthly meetups and wider Turing events; Presentation at Partner reading groups, conferences and to Partner stakeholders; Publication, support and maintenance of research software.

In addition, for senior staff only, successful candidates may:

- 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;
- Line manage other staff within the group, supporting their career development aspirations.
- 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.

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PERSON SPECIFICATION

<p style="text-align: center;">Skills and Requirements</p> <p style="text-align: center;">Post holders will be expected to demonstrate the following</p>	<p style="text-align: center;">Essential (E)</p> <p style="text-align: center;">Desirable (D)</p>	<p style="text-align: center;">Tested at application(A)</p> <p style="text-align: center;">Tested at interview (I)</p>
Education/Qualification		
Undergraduate-level degree or higher in computer science, engineering, data science, mathematics, statistics or a related-discipline.	E	A
A PhD degree or equivalent professional experience in a field with significant use of both computer programming and advanced algorithmic, statistical or numerical techniques.	D	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 particularly, 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, is most welcome.	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 managing, structuring, and analysing research data as well as experience managing and organising the parameters and results of computational experiments.	E	A&I
Direct experience developing and deploying technologies in support of Defence and National Security organisations.	D	A&I
Machine learning, including experience with one or more established software libraries (e.g. Tensorflow, Keras, PyTorch, scikit-learn).	D	A
Working with (relational and non-relational) databases and APIs to access data programmatically using query languages (e.g. SQL, Elastic Query DSL, GraphQL).	D	A
Experience of developing analytics suited to large-scale data processing (e.g. Spark).	D	A
Experience of deploying and maintaining developed capabilities operationally.	D	A

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User interface design and development with web technologies, especially for data visualisation and knowledge representation.	D	A&I
Experience with public cloud platforms and related technologies.	D	A&I
Experience working with confidential and sensitive data for research.	D	A&I
Experience building open-source communities.	D	A&I
<i>Additional Requirements for Senior Level</i>		
Experience leading a project to a successful conclusion.	E	A
Demonstrable experience managing conflict and resolving stakeholder tensions.	E	A
EITHER Experience in making or evaluating the case for new projects (e.g. authoring or evaluating research proposals or business cases) OR Experience of managing, prioritising and resourcing a project portfolio.	E	A
Communication		
Excellent written and verbal communication skills, demonstrated by, for example, experience in the visual representation of quantitative data, documentation of software packages or data resources, the authoring of research papers or technical reports, and giving presentations or classes on technical subjects.	E	A&I
Initiative and Problem Solving		
Ability to lead one's own work independently, including planning and execution, and to collaborate productively as part of a team.	E	A
Visualisation for understanding large, complex, or high-dimensional data.	D	A/I
Analysis and Research		
Ability to rapidly assimilate new computational and mathematical ideas and techniques on the job, at a more than superficial level, and apply them successfully.	E	A&I
Ability to contribute and maintain and/or leading open-source research software projects.	D	A
Automated testing, software quality assurance, infrastructure-as-code and continuous integration.	D	A
Developing for containerised, micro-service focussed deployment (e.g. Docker, Kubernetes).	D	A
Ability to write technical documentation.	D	A
Team Development		

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Developing and/or delivering teaching and training in computational or mathematical methods for research and/or in applications of data science methods for non-programming experts.	D	A
<i>Additional Requirements for Senior Level</i>		
Experience mentoring and evaluating the work of others (formal line management experience is not essential, but such applicants should be able to show significant evidence of informal mentorship.)	E	A
Other Requirements		
Commitment to meeting deadlines	E	A
Flexible attitude towards work	E	A/I
Commitment to EDI principles and to the Organisation values	E	I

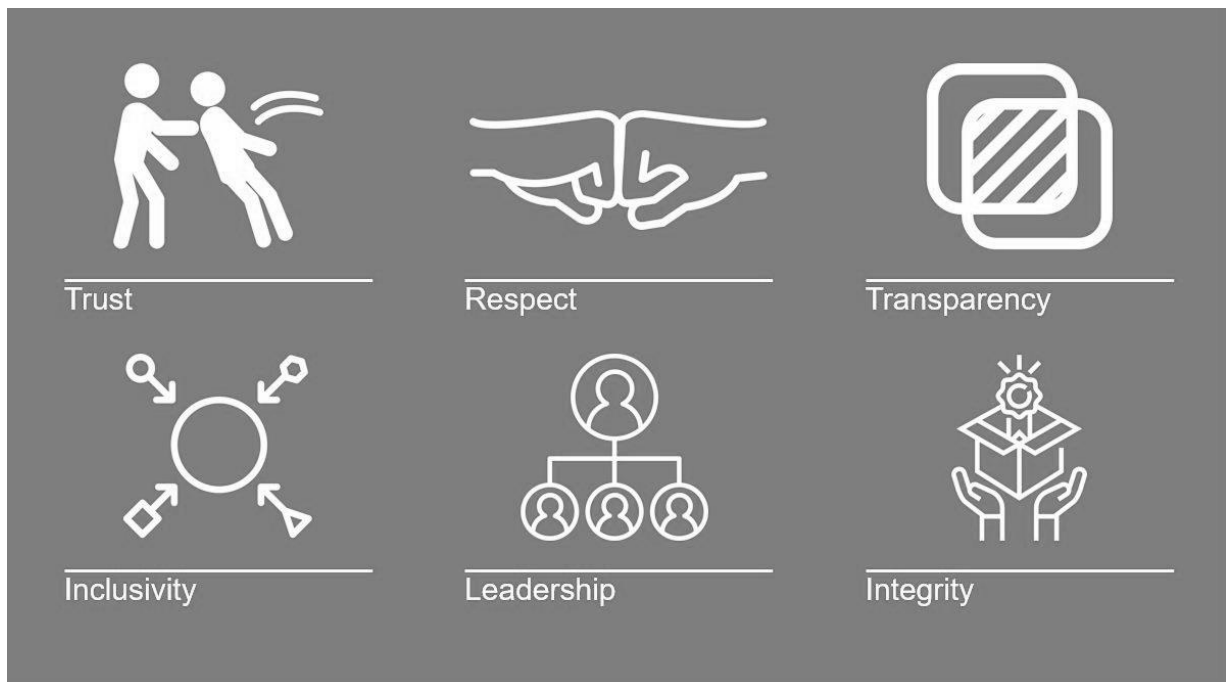
Please note that job descriptions cannot be exhaustive, and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities. This job description is written at a specific time and is subject to changes as the demands of the Institute and the role develop.

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Our Values

EQUALITY, DIVERSITY AND INCLUSION

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 [Rules of the Game](#)



Respect – We treat everyone with respect, dignity and kindness and acknowledge the experiences, skills and contributions of others.

Trust - We communicate openly and honestly to support an environment where we have trust in each other.

Transparency – We seek to ensure that everyone understands the how and the why of our decisions and actions. We take on board to feedback when those decisions are challenged.

Inclusivity – We are committed to continuously learning how to be more inclusive by listening to those facing barriers.

Leadership – We recognise creating an inclusive, diverse and equitable institute requires leadership from all. We stand up and speak out when change is needed.

Integrity – We recognise that how we work is as important as our outputs and seek to exemplify best practice in all our decisions.

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, covering letter and contact details for your referees. If you have questions about the role or would like to apply using a different format, please contact them on 0203 862 3340, or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: 20 May 2021 at 23:59.

Developed Vetting security clearance is an essential requirement for this role. Eligibility criteria and further information on the process can be found on the UK Government security vetting website: <https://www.gov.uk/government/publications/united-kingdom-security-vetting-clearance-levels/national-security-vetting-clearance-levels#developed-vetting-dv>

Candidates who are not granted DV clearance, withdraw from the process before completion or who are found to be ineligible will not be able to undertake this role.

INTERVIEW PROCESS

As part of their interview candidates will be expected to prepare a short tech talk on your favourite algorithm/model/library or tool in data science, artificial intelligence or machine learning. This could be delivered using a literate programming tool, such as Jupyter but we welcome talks delivered in other traditional or non-traditional formats.

Should you be shortlisted and successful for the first interview, a second-stage interview will be held shortly after.

TERMS AND CONDITIONS

This full-time post is offered on a 2 year fixed-term basis. Competitive salary (dependent on skills and experience) plus excellent benefits, including flexible working and family friendly policies, <https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits>

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.

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.