

The Alan Turing Institute

RESEARCH COMPUTING ENGINEER

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 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 permanent research staff of the Institute's Research Engineering Group (REG) work towards maximising impact in data science research projects by realising cutting edge research as professionally usable software tools, so they can be used to address real-world challenges. As part of this group, the Research Computing Team focuses on how our community can benefit from the latest and greatest technology and innovations in digital research infrastructure.

ROLE PURPOSE

Research Computing Engineers (RCEs) specialise in prototyping, building, supporting, and maintaining research infrastructure. Our primary focus is supporting researchers in taking the advantage of this infrastructure, including commercial cloud, high-performance computing (HPC) centres, and the internet of things, to facilitate cutting-edge research in data science. The support comes in different ways and could be anything from adapting research workflows on the target infrastructure and bridging the gap between researchers and technology, to anticipating the needs of computational resources and developing a computing strategy. We develop and work with state-of-the-art, HPC and cloud infrastructure to realise collaborators' data science and artificial intelligence research at scale.

RCEs at the Turing run a lightweight compute allocation request process that allows hundreds of AI researchers and practitioners at the institute to exploit digital research infrastructure with a very short access time to the compute. With AI models continuing to grow in both size and complexity, we are also working on capturing the emerging needs, as well as the current blockers, of using national supercomputers for AI by our community. Finally, we contribute to group's internal and Turing projects where we provide digital infrastructure expertise. We helped projects like [CROP](#), [London Air Quality](#) and [Data Safe Haven](#) with prototyping and implementing cloud infrastructure, and experimented with specialised hardware and software (i.e. ASICs, Intel SGX, Cray's graph engine).

DUTIES AND AREAS OF RESPONSIBILITY

- Contribute to designing, developing, improving, maintaining and supporting existing digital research infrastructure at the Institute.
- Contribute on research projects, form new collaborations and support colleagues in the use of digital research infrastructure.
- Engage with a community of stakeholders, including senior researchers, programme leaders, and the wider business team at the Turing.
- Present, disseminate and explain our work via presentations, reports and well-documented software packages.
- Deliver teaching and training to colleagues and students.

PERSON SPECIFICATION		
Skills and Requirements Post holders will be expected to demonstrate the following	Essential (E)	Tested at application (A)
	Desirable (D)	Tested at interview (I)
Education/Qualification		
Industry or academic experience (for instance pursuing a PhD) in a field with significant use of both computer programming and advanced statistical or numerical methods.	E	A/I
Knowledge and Experience		
Experience and interest in cloud and/or HPC technologies.	E	A/I
Experience in designing, developing, and maintaining research software.	E	A/I
Experience with DevOps practices and tools. For example: containerisation/virtualisation (e.g., Docker), infrastructure as code (e.g., Terraform), configuration management (e.g., Ansible), commercial cloud (e.g., Azure), git, shell, etc.	E	A/I
Fluency in one or more modern programming languages used in research in data science and artificial intelligence. (We particularly work in R, Python, and modern C++, but demonstrable use of other programming languages for research, 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, such as version control, issue tracking, automated testing, package management and literate analysis tools such as Jupyter and Rmarkdown.	E	A/I
Communication		
Excellent written and verbal communication skills, including experience in the authoring of technical reports or research papers, and giving presentations or leading classes.	E	A/I
Analysis and Research		
Experience managing, structuring, analysing and visualising research data and the results of computational experiments.	D	A/I
Teamwork and Motivation		

Ability to lead one's own work independently, including planning and execution, and to collaborate productively as part of a team.	E	A/I
Team Development		
Ability to coach/mentor others or act as "buddy" providing advice, guidance and feedback to help team members work more effectively.	D	A/I
Initiative and Problem Solving		
Demonstrated enthusiasm and ability to rapidly assimilate new computational and mathematical ideas and techniques on the job and apply them successfully.	E	A/I
Other requirements		
An understanding of the importance of equality and diversity within an organisation and a commitment to helping create an inclusive culture.	E	I

ADDITIONAL DESIRABLE EXPERIENCE

The Research Computing Team is a learning group and actively encourages its members to develop their skills so that they can apply new techniques and approaches across their projects. A commitment to developing new expertise is therefore very desirable to us. In addition to the technical skills you already have, we will look for evidence of a commitment to learn by looking at new skills you have developed in previous roles, and your interest and plans for acquiring future skillsets.

We note that not all skills useful to us will fall into the categories of software engineering. Experience in teaching and training, building open-source communities, scientific computing, knowledge of public cloud or high-performance computing platforms, or other areas, are all very welcome. If you feel that your skillset and experience would support the Team's activities, we strongly encourage you to apply. We welcome any informal inquiries in regard to this.

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.

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](#).



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 photos) and a cover letter (maximum 2 pages) as PDF documents, telling us:

- Your past experience working with code and/or data
- Why you would like to become part of the Research Computing Team
- How your skillset would complement the activities of the group.

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.

For questions about the role and the recruiting process check the [Frequently Asked Questions](#) or get in touch with us at recruitment@turing.ac.uk. If you would like to apply using a different format, please contact recruitment@turing.ac.uk where you can discuss this further.

CLOSING DATE FOR APPLICATIONS: 7 October 2022 at 23:59

TERMS & CONDITIONS

This full-time post is offered on a permanent basis. The annual salary for this role is £40,000 - £46,000 (depending on skills and experience), with possibility of progression once in post up to £48,491. There will also be opportunities for promotions to senior positions, to which new members are considered eligible after at least one year in the team.

The Alan Turing Institute is based at the British Library, in the heart of London's Knowledge Quarter.

In line with current Government guidance, most of our organisation is currently working remotely. When Government guidance changes, we will trial a Hybrid Working Model for an initial six-month trial period. During this period, staff will be expected to work at our British Library office for a number of days per month, dependent on the requirements of the role. As a guide, we anticipate this will be between 2-4 days per month, but the hiring manager will be able to confirm this during the interview.

Our [generous benefits package](#) includes flexible working, 30 days' holiday (excluding bank holidays), Cycle2Work, a great pension scheme, life insurance cover, private medical insurance along with a range of other 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 can also be made for any candidates with a disability.

Please note all offers of employment are subject to continuous eligibility 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.