

The Alan Turing Institute

Research Fellow Dstl (Radio Frequency)

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. Its defence and security programme works at the cutting edge of data science, in collaboration with the Ministry of Defence and GCHQ, to deliver an ambitious programme of data science research. Its public policy programme also plays a crucial leadership and advisory role in the public sector, working alongside policy makers to explore how data-driven public service provision and policy innovation might solve long running 'wicked' policy problems and developing the ethical foundations for the use of data science and artificial intelligence in policy-making.

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.

Defence Science and Technology laboratory (Dstl) ensures that innovative science and technology contribute to the defence and security of the UK and it is one of the founding public sector organisations funding the Alan Turing Institute. Defence needs to be trusted by society to responsibly and ethically employ AI technologies. To ensure this trust, Defence policy, legislation and ethical frameworks are required and Dstl is developing a research evidence base to inform these activities.

THE ROLE

The Research Fellow will sit within the Future Signal Processing project and work to apply machine learning (ML) techniques to the radio frequency (RF) domain. They will work closely with the Signal Processing (FES) ML Scholar and advise the different technical challenges within the FES project.

The end objective is to develop ML capabilities within the RF domain that provide improvement over traditional techniques. The aim is to publish in academic journals and help build an interest in the area within the academic community. The fellow will also aid in the development of the FES team and the future direction of AI/ML in the RF Domain.

DUTIES AND RESPONSIBILITIES

The Research Fellow will work closely with the fellows based at Turing Institute as well as those at Dstl to:

- Perform research into applying machine learning and data analytics to the RF domain to solve sensing problems (e.g. detection, identification and fusion).
- Collaborate with the FES ML Scholar and develop a close working relationship with the FES Team
- Develop the application of ML techniques with the wider FES project.
- Recommend techniques to the different FES challenges
- Identify industry proposals that may offer the most impact to the project.
- Write/contribute to publications or disseminate research findings using other appropriate media.
- Attend and present research findings and papers at academic and professional conferences
- Contribute to the external visibility of Dstl and the future ES project.
- Produce papers/reports and, where applicable, code that demonstrates the utility of ML techniques for the RF domain.

PERSON SPECIFICATION

The successful candidate will have:

ESSENTIAL

- Possession of a PhD or an equivalent qualification or experience in Signal Processing, Machine Learning, Radio Frequency or a related discipline.
- The successful candidate will need to be able to interact with scientists and engineers from a broad range of disciplines in multi- and inter-disciplinary teams.
- The ability to develop and implement strategic research and capability development plans.
- The ability to initiate, plan, organise, implement and deliver programmes of work to tight deadlines.
- The ability to influence others through effective communication (oral and written) skills, presentation and training skills.
- Effective strategic thinking, leadership, and mentoring skills.

DESIRABLE

- Strong track record of research publication in the area of Signal Processing, Machine Learning, Radio Frequency or a related discipline appropriate to career stage.
- Established, vibrant research and practitioner networks at the national and international level.
- Knowledge and understanding of the Defence and Security domain.
- Understanding of ML and data analytics and application to solve problems.
- (SC) security clearances

TERMS AND CONDITIONS

This full-time post is offered on a two-year fixed term basis. The annual salary is £42,000 plus excellent benefits, including flexible working and family friendly policies, <https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits>

This job description is written at a specific time and is subject to change as the demands of the Institute and the role develop. The role requires flexibility and adaptability and the post holder needs to be aware that they may be asked to perform tasks and be given responsibilities not detailed in this job description.

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, gender reassignment, marital and civil partnership status, pregnancy, religion or belief or 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.