The Alan Turing Institute

RESEARCH ASSOCIATE – AI for Cyber Security – D&NS

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 AI for Cyber Defence (AICD) Research Centre, one of our Defence & National Security teams, is building on its ambitious programme of research to deliver a fundamental shift in cyber security using AI methods and tools. Working alongside other researchers and engineers at the intersection of machine-learning and cyber security, you will advance the science and research needed to:

- Build and support the development of realistic environments that allow AI agents to be trained and validated. You will build environments that are representative of real-world networks, including those found in critical infrastructure, and advance the science needed to train and evaluate AI-based autonomous defences.
- Design competitive cyber security tasks, and make breakthroughs in cyber evaluation, ensuring our mission remains grounded in scientifically rigorous research.
- You will build novel AI agents and techniques, benchmark and validate performance, and advance applied and fundamental research as prioritised by impact on prioritised use cases.

As a team we aim for high-impact research and innovation that delivers value for our stakeholders and the wider scientific, industrial, and government communities. 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 are a cross-disciplinary team and encourage applications from computer and information security researchers, cyber security practitioners, software engineers, computer scientists, machine learning scientists, mathematicians, statisticians, data scientists, and data engineers.

The team practices an agile, experiment-driven approach and values a positive, supportive and collaborative environment in which ‘radical candour’ and ‘lifelong learning’ are encouraged. We embrace failure as a learning opportunity and necessary precursor to success. We are empowered to take ownership of our work and operate with a high level of autonomy in our roles, to deliver measurable impact to our partners.

Eligibility for Security Check (SC) clearance is a requirement for this role. Eligibility criteria and further information on the process can be found on the UK Government security vetting website.

ROLE PURPOSE

This role will sit within the Defence and National Security team and will focus on advancing cyber security using machine learning.

Working alongside researchers, engineers and subject matter experts, the postholder will contribute to the development of realistic environments for training and validating AI agents, the design of scientifically rigorous cyber security tasks and evaluation methods, and the benchmarking of novel AI techniques. They will produce high-quality research and technical outputs, communicate findings to a range of audiences, and help ensure that the Centre’s research remains relevant to real-world cyber security challenges.

HOW YOU WILL MAKE AN IMPACT

- Undertake high-quality collaborative research in the domain of AI for cyber security, contributing to the research aims of our mission.
- Play a role planning and running AI-based cyber competitions, ensuring environments and evaluation protocols are methodologically sound and aligned to real-world use cases.
- Produce high-quality technical artifacts and research outputs, including academic papers, technical reports, methodological notes, and open-source contributions;
- Communicate methods and findings clearly to a range of audiences (research colleagues, senior decision- makers, and non-technical stakeholders), without oversimplifying or overclaiming.
- Horizon scanning across relevant fields for new advancements and methodologies
- Be a point of contact, supporting PIs in engaging with stakeholders regarding projects and deputising in meetings where necessary.
- Supervise the work of research assistants and Ph.D. interns in the team and provide guidance as required.
- Contribute to the preparation of proposals and applications to external bodies, e.g., for funding and contractual purposes.

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

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)**
A PhD (or equivalent experience and/or qualifications) or equivalent experience in cyber/information security, AI, machine learning, computer science, engineering, or a related discipline	E	A
Research Assistant Level: A master's degree (or equivalent experience and/or qualifications) or equivalent experience in cyber/information security, AI, machine learning, computer science, engineering, or a related discipline	E	A
Research experience including at least one of: systems security, network security, cyber-physical systems security, AI Security, formal verification, systems or software assurance.	E	A/I
Strong software development in a scientific computing context, ideally Python, with standard tooling (Git, Linux), and a track record of delivering working research software or applied engineering artefacts with measurable outcomes.	D	A/I
Ability to plan and carry out research independently or collaboratively, evidenced by high-quality outputs commensurate with career stage including publications, technical reports, or significant open-source contributions.	E	A/I
Ability to work effectively in a multidisciplinary team, sharing knowledge and supporting others, while taking ownership of your own work including prioritising, meeting deadlines, and making evidence-based decisions with appropriate autonomy.	E	A/I
Excellent written and verbal communication, including presenting complex technical information to diverse audiences (research colleagues, senior decision-makers, non-technical stakeholders) and representing the Institute externally.	E	A/I
Must be eligible for SC (Security Check) clearance	E	A/I
Commitment to EDI principles and to the Organisation values;	E	A/I

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 and covering letter. The covering letter should address:

- Why you are applying for this position
- How you qualify for this position (see criteria under “Person Specification”)
- Publication list (if not covered in CV)

If you have questions about the role or would like to apply using a different format, please contact us at recruitment@turing.ac.uk.

The Alan Turing Institute

TERMS AND CONDITIONS

This post is offered on a full time, fixed-term basis for 12 months. The annual salary is £46,415 - £52,494 plus excellent benefits, including flexible working and family friendly policies, which can be seen here.

Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant at a salary of £43,445 per annum.

Eligibility for Security Check (SC) clearance is a requirement for this role. Eligibility criteria and further information on the process can be found on the UK Government security vetting website.

EQUALITY, DIVERSITY AND INCLUSION

We value diversity of background, experience, and perspective, and are proud to be an inclusive employer. We warmly encourage applications from all backgrounds, particularly from groups currently under-represented in our sector. If you feel passionate about this role but don't meet every single requirement, please apply - we recognise that great candidates may bring strengths beyond the criteria listed**.**

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 recruitment@turing.ac.uk to advise us 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.

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

The Alan Turing Institute

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.

