The Alan Turing Institute

AI for Science and Government Theme Lead: Tools, Practices and Systems

(Part-time and open to external secondment)

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 several 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

AI for Science and Government (ASG) is a major integrated research programme at the Alan Turing Institute with a goal to deploy AI and data science in priority areas to support the UK economy. ASG was initiated in 2018 with a £38.8M investment from the UK government's strategic priorities fund and supports a range of ongoing projects in different domain areas including applications in Health, the Criminal Justice System, Data Science for Science, Engineering, and Urban Analytics.

The grant lasts for five years and will end in March 2023. The Management Board have delivered a successful mid-term review and will spend the final year of the funding focusing on delivering three cross theme projects, and integrated activity through a series of white papers. Broad themes include:

- Shocks and Resilience: Measuring the impact of policy interventions related to COVID-19 and building resilience against future shocks.
- Ecosystems of Digital Twins: Bringing together multidisciplinary expertise in urban analytics, complex systems engineering and economics.
- Environment and Sustainability: Using data science and AI to tackle environmental and climate challenges.

The Tools, Practices and Systems (TPS) Theme of ASG is part of the TPS Programme. The programme seeks to build trustworthy systems, embed transparent reporting practices, promote inclusive interoperable design, maintain ethical integrity, and encourage respectful co-creation. TPS is supported by a volunteer leadership team, whose members represent experts in open infrastructure internal and external to the Turing community.

Research Application Managers (RAMs) at the Turing build and nurture the connections with users of research outputs and bring back the user perspective to researchers and research engineers. Three members of the RAM team are funded by ASG and further the investment's mission by providing a specialised delivery mechanism that enhances the adoption of research outputs by the wider stakeholder community. In doing so, we ensure that the research that happens within ASG and across the Turing Institute leaves a lasting legacy on the national and international data science ecosystem for commercial and public interest technologies alike.

Community managers at the Turing invest in training and empowering a diverse group of researchers, research engineers, programme management, and business team members to build interconnected systems of open source

software, datasets and processes. They ensure that the research that happens at the Institute is created to be maintained, sustained, remixed and reused to make research and innovation more efficient and effective across the national and international data science ecosystem for commercial and public interest technologies alike. The ASG community manager is leading on delivering co-created white papers that illustrate how the projects deliver outputs that can transform science, government, business and industry.

The Turing Way is an open source community-driven guide to reproducible, ethical, inclusive and collaborative data science. The project goal is to provide all the information that data scientists in academia, industry, government and the third sector need at the start of their projects to ensure that they are easy to reproduce and reuse at the end.

We are recruiting an **ASG Theme Lead** who will be responsible for delivering TPS Theme's work on research applications and community engagement. Their goal is to ensure that ASG delivers FAIR (findable, accessible, interoperable and reusable) outputs that are greater than the sum of their parts, and scale to be adopted worldwide and beyond the end of their current funding.

ROLE PURPOSE

This is a stand-out opportunity to join a prestigious, national research institute and deliver its impact at an important and exciting time in its development. The ASG TPS Theme Lead will deliver the TPS Theme as a member of the ASG Management Board. They will work closely with the TPS Senior Researchers, TPS Programme Manager, ASG Core team, and ASG External Advisory Board. We anticipate that the postholder will need to embody the values of *leadership*, *legacy* and *collaboration*, in addition to their commitment to equity and inclusion as described in the Turing's Values (see below).

ASG Theme Leads are leaders in their field of expertise. They are members of the ASG Management Board which includes representatives from Turing partner universities and the Engineering and Physical Sciences Research Council (EPSCR). They represent the Institute to a broad community of stakeholders across the national and international data science and open source ecosystems. The TPS Theme Lead's role is particularly important in the final year of ASG funding to ensure that the extensive work conducted to date is communicated clearly and to a broad and diverse audience across industry, government, and the academic and charity sectors.

The TPS Theme Lead for ASG will line manage the TPS Senior Researcher who leads the ASG RAM team. RAMs ensure that research outputs from Turing projects are used successfully and sustainably by internal and external stakeholders. ASG has invested in them in order to leave a lasting legacy on the ecosystem. They combine their technical acumen with service delivery experience. RAMs work on multiple projects concurrently, and each project will be different in different ways. The TPS Theme Lead will mentor and support the RAM team, particularly focusing on balancing their adaptability, without undermining a determined perseverance on delivering useful outputs from ASG projects.

The TPS Theme Lead will also line manage the TPS Senior Researcher responsible for Open Research practices across ASG. Community managers collaborate closely with others and identify where they are able to surface implicit knowledge and make information explicitly available so that everyone who wants to can participate. The ASG Community Manager is tasked with delivering a series of influential white papers (and other outputs) that draw upon ASG research to address key issues for policy-makers and other stakeholders on the future of AI in science and government. As a steward of their community, the ASG Community Manager will see how individual pieces fit together as a whole. They will facilitate the collective writing and co-creation of the white paper reports by all members of the ASG community. The TPS Theme lead will mentor and support the community management team in bringing the ASG community together in this endeavour and will help to distil a coherent ASG vision from its many domain specific projects.

The postholder will work closely Prof Ben MacArthur, ASG Programme Director, Prof Jon Rowe, ASG Programme Chair, Dr Allaine Cerwonka, Associate Director for ASG, Hannah Sweeney, ASG Programme Manager, and TPS Senior Researchers, Dr Malvika Sharan and Dr Aida Mehonic. Prof Ben MacArthur will be their line manager.

This post is maternity cover for Dr Kirstie Whitaker, TPS Programme Director and TPS Theme Lead, who will be available for handover and knowledge transfer conversations until May 2022. Dr Whitaker plans to return to work in January 2023. There will be 3 months of overlap between this post and Dr Whitaker's leadership of the TPS Programme to ensure that the postholder has the opportunity to deliver ASG in March 2023.

DUTIES AND AREAS OF RESPONSIBILITY

- Oversee the production of a series of community-written ASG white papers that distil important principles from the range of ASG research and collectively articulate the ASG vision to stakeholders including policy makers in national and local governments, domain expert practitioners such as clinicians or engineers, and members of the public.

- Oversee the RAM team and support them in their mission to maximise the impact of academic research across the wider ecosystem. Ensure that the outputs of the research process are translated into real-world implementations and that they are used by stakeholders external to Turing. RAM activities will include some or all of the following:

  - Identify appropriate potential users of research outputs (in collaboration with, and as approved by, ASG Theme Leads and/or project PIs).

  - Work closely with teams within user organisations to understand their needs at the appropriate level of technical and infrastructure detail to ascertain whether particular research outputs could be useful in their workflow.

  - Work closely with ASG and Turing researchers to represent user needs and constraints in what should become an effective feedback loop.

  - Identify challenges that potential users have in deploying tools built at the Turing and co-create solutions as an active member of the research teams.

  - Promote the sustainable use of research outputs by facilitating high-quality analysis, modelling and reporting documentation, and training materials, in collaboration with researchers, developers and domain experts.

  - Reach out to and sustainably communicate with open source communities to raise awareness of and get feedback on tools being built at the Turing.

- Advocate for and drive forward adoption of open research tools, practices and systems across ASG projects. Engage and establish collaborations with key stakeholders, research engineers and academics working across different projects, with a particular focus on members of the AI for Science and Government investment.

- Represent the TPS Theme of ASG at TPS Theme Lead meetings, ASG Management Board meetings, ASG External Advisory Group meetings, and external conversations with key stakeholders.

- Line manage two TPS Senior Researchers. Direct their activities on a daily basis, provide mentorship to ensure they have the information and skills they need to perform their duties and responsibilities, bringing in support from across the TPS Programme, ASG investment, or broader Turing ecosystem as necessary. Undertake regular performance appraisals, and support their career development where necessary.

- Join the TPS Leadership Team and work with the group members to feedback on the overarching research and innovation strategy for Tools, Practices & Systems, identifying areas where the programme could have the largest impact in open infrastructure and collaborative practices. Leadership Team responsibilities include:

  - Work with the Turing Partnerships team, develop proposals for research grants, corporate sponsorship and other funding, and establish scientific collaborations between the TPS Programme and national and international organisations.

  - Work closely with the Tools, Practices and Systems programme leadership - including colleagues in the Partnerships and Programme Management Unit - to shape funding and delivery strategies for the TPS Programme. Set, implement, and regularly review programme objectives and activities, in alignment with the Institute's strategies.

  - Represent the TPS programme at industry, academic and practitioner events and high level meetings, and establish closer connections internally at the Turing and with external organisations and communities from their own networks.

- Catalyse connections and collaboration between researchers across the Institute, with a particular focus on the research teams within the AI for Science and Government investment. This could come in the form of

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synchronous regular meetings or it could occur asynchronously, for example, through active engagement on distributed communication channels such as Slack and the maintenance of public and private GitHub repositories to documented ongoing work within the projects and Themes.

- Communicate technical topics to colleagues and external partners by preparing and presenting reports, blog posts, organising and delivering presentations, and taking an active role in meetings and discussions. Communications may be synchronous or asynchronous, remote or in person, and must be prepared at the appropriate granularity of detail for the audience.

- Publish - as a lead or co-author - peer-reviewed research articles, open source training curricula, and/or perspective, opinion and commentary articles, as appropriate. This responsibility will be defined to be aligned with the successful candidate's personal career goals, through collaborative discussion when they are in post.

- Contribute to the research aims and challenges of the Tools, Practices and Systems programme, and those of the Turing Institute more broadly. Share the responsibility of embedding our ethical values in research processes and outputs, and promoting equitable and inclusive co-creation of data intensive projects.

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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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)**
Education/Qualification		
PhD or equivalent level of professional qualifications and/or experience in data science (broadly defined to include mathematics, statistics, computer science pure or applied) or related quantitative discipline	E	A
Knowledge and Experience		
Record of excellence in AI, mathematics, statistics, computer, social science and/or related areas with an emphasis on cross cutting applications, obtained in an academic, government and/or industrial setting	E	A/I
Leadership and strategic vision skills, especially as required in a complex, research-intensive collaboration with academic and/or industry partners	E	A/I
Ability to create and promote a collegiate and collaborative approach to research partnership activities	E	A/I
Talent for identifying opportunities for research collaborations beyond the applicant's own academic specialty	E	A/I
Experience of managing and leading a team	E	A/I
Previous experience in a similar role	D	A/I
A strong network of contacts across the open source data science ecosystem	D	A/I
Communication		
Communication and advocacy skills, both verbal and written, with the ability to express ideas and concepts clearly and coherently to diverse audiences and to engage in public debate	E	I
Ability to communicate and network across disciplines	E	I
Able to verbally communicate complex and specialist information clearly and persuasively, presenting compelling arguments to influence and/or negotiate outcomes	D	I
Able to explain complicated matters simply, in a written/electronic format, tailoring the format to suit the audience's needs	D	I
Decision Making		
Independently makes long lasting, complex decisions at an operational or strategic level which effects a large part of the department	E	A/I

Able to make strategic decisions which have a significant impact for the organisation, ensuring processes are robust and decisions are challenged appropriately	E	A/I
Planning and Organising		
Set performance standards and formulates action plans, monitoring and reviewing progress regularly	D	A/I
Undertake medium-term resource planning in-line with department objectives	D	A/I
Initiative and Problem Solving		
Able to resolve complex problems with the personal skills and initiative to achieve the solution	E	A/I
Able to identify solutions that bring wider and longer term benefits for the organisation and potentially external partners	D	A/I
Analysis and Research		
Develop new hypotheses and concepts for testing to expand or extend existing body of knowledge	E	A/I
Challenge the status quo and provide approaches to explore new possibilities or explanations	E	A/I
Ability to bridge both fundamental and applied research	E	A/I
Other Requirements		
Commitment to meeting deadlines	E	I
Flexible attitude towards work	E	I
Commitment to EDI principles and to the Organisation values	E	I

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 and covering letter. If you have questions about the role or would like to apply using a different format, please contact us on 020 3862 3565, or email recruitment@turing.ac.uk.

If you are currently employed by a University and require secondment to the Alan Turing Institute for the duration of this role as opposed to direct employment, please provide a statement of support from the applicable Head of Department to allow secondment (see Terms and Conditions below) via email

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to tps@turing.ac.uk. Statement can be submitted up to a week after closing date. This is an administrative requirement only and will not be part of assessment criteria.

CLOSING DATE FOR APPLICATIONS: Sunday 03 April 2022 at 23:59

TERMS AND CONDITIONS

This post is available up to 0.5 FTE. We will consider 0.3 - 0.5 FTE; however, 0.5 FTE is preferred.

This part-time post is offered on a Fixed Term basis until 31 March 2023. Subject to securing additional funding, further extension is also possible.

The full time equivalent annual salary is £67,000-£70,000, pro-rated to £33,500-£35,000 at 0.5 FTE. This opportunity is open for both direct employment and secondment from your employer (not limited to the Turing University Partner network).

If you are seconded from your employer, a secondment agreement will cover your salary and on-costs, plus VAT if applicable. Payments will be made on a quarterly basis to your employing University.

If you are employed directly by The Alan Turing Institute you will be entitled to 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.

We are committed to building a diverse community and would like our leadership teal 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***.***