The Alan Turing Institute

Tools, Practises and Systems Senior Researcher – Participatory Citizen Science

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 Tools, Practices and Systems (TPS) programme at the Turing represents a cross-cutting set of initiatives which seek to build open source infrastructure that is accessible to all, and to empower a global, decentralised network of people who connect data with domain experts. The programme seeks to build trustworthy systems, embed transparent reporting practices, promote inclusive interoperable design, maintain ethical integrity, and encourage respectful co-creation.

The Artificial Intelligence for Multiple Long Term Conditions (AIM) Research Support Facility (RSF) is a £3 million National Institute for Health Research (NIHR) funded project to support research teams from around the UK in their efforts to systematically identify new clusters of disease and the development of conditions over the life course. The AIM RSF seeks to build capacity and capability in AI and MLTC-M research, foster a collaborative approach and a culture of shared learning, and provide a leadership role to facilitate impact from the AIM investment.

AutSPACEs is a co-created, participatory, citizen-science platform which will be used to investigate how sensory processing differences affect the daily experiences of autistic people. The data management framework and the platform itself are open source and co-created in collaboration with a diverse community of autistic people and their relatives and carers. All software, and design and process documents, are available under permissive open source licences. The platform builds on the Open Humans framework to allow fine-grained control over contributor's data and how it is used. Open Humans is a foundation which enables research participants to have awareness and understanding of, as well as an agency over, their own data.

The NIHR RSF has been created to ensure that the funded research projects work together efficiently to answer questions relevant to patients and the general public. As part of the Patient and Public Involvement and Engagement (PPI/E) workstream we will adapt the AutSPACEs citizen science platform to the MLTC community. This activity will be co-created with patients with a goal of sharing their experiences of navigating the health care system as people living with multiple long term conditions.

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.

TPS Senior Researchers contribute to the TPS Programme in four distinct ways.

1. As a TPS programme researcher, conducting original research and supporting TPS leadership in programme strategy and delivery

2. As a manager of a dedicated team within the programme. In this case, the postholder would manage a community manager and research associate focused on delivering the Turing Citizen Science platform for AutSPACEs and the NIHR AIM RSF.
3. As a hands-on practitioner, working at least 50% embedded within research project teams. In this case, working within the AutSPACEs and NIHR AIM RSF teams – and potentially additional future applications – to embed and promote patient and public perspectives across the data science ecosystem.
4. As an Institute-wide expert on reproducible, ethical, inclusive and collaborative data science best practice, with a particular focus on ensuring public perspectives are heard and incorporated through a project's lifecycle.

We are recruiting a TPS Senior Researcher who will lead on participatory citizen science and who will work to mentor, train and embed the expertise from the TPS, Turing Way and broader open source and citizen involvement communities across the Turing Institute. Their goal is to ensure that we are embedding our values of inclusion, engagement and agency in projects so that they deliver 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 the current funding.

ROLE PURPOSE

TPS Senior Researchers advocate for open research practices across the Institute along with responsibilities specific to their particular specialism. The senior researcher responsible for participatory citizen science ensures that researchers – including those with lived experience – deliver on their mission to build tools and platforms that involve and empower the groups of people they are designed to support. We anticipate that the postholder will need to embody the values of *leadership*, *initiative* and *understanding*, in addition to their commitment to equity and inclusion as described in the Turing's Values (see below).

TPS Senior Researchers are permanent staff members at The Alan Turing Institute and leaders in their field of expertise. They are members of the TPS Leadership Team and are expected to represent the Institute to a broad community of stakeholders across the national and international data science and open source ecosystems. TPS Senior Researchers contribute to designing and delivering funding and engagement strategies for the Tools, Practices and Systems Programme. They will be responsible for building the TPS community, connecting with experts in free and open source software, secure data analysis, community-led data standards development, and the development of responsible research and innovation practices. The TPS Senior Researcher for participatory citizen science will be invited invited to join the AutSPACEs project as a co-lead investigator with Dr Kirstie Whitaker. In this role they would take responsibility for the strategic and operational development of the project and in doing so will have the opportunity to gain a deeper understanding of community leadership, the real world implementation of ethical practices, and the sustainability of open source projects.

As a expert in their field of participatory citizen science, we expect the postholder to take initiative to apply their skills in new situations. They will listen to community members who have lived experience of multiple long term conditions or sensory processing differences and find pathways for those perspectives and needs to be heard by national and international research communities. ensure that research outputs from Turing projects are used successfully and sustainably by internal and external stakeholders. They will undertake active outreach activities to identify people who are at risk of being left out of the co-creation process. The postholder will oversee the delivery of open source infrastructure built using Django (Python) on the Open Humans data management infrastructure. Although we do not expect all applicants to have web development skills we do expect them to be able to learn at pace and to effectively mentor developers within the Turing and from across the open source project communities including ethics researchers in Turing's Public Policy Programme, the NIHR PPI/E team, PPI/E teams advising and collaborating with individual research projects within the AIM investment, the existing AutSPACEs and Open Humans communities, the Autistica Discovery Network, and the TPS and Turing Way communities.

The TPS Senior Researcher for citizen science will manage a small team of researchers, research software engineers, and a community manager to deliver a framework that meets the AutSPACEs and NIHR AIM RSF requirements, and that is extendable to new research questions. They will bring together experts – including experts by lived experience – who work on different projects and across distributed communities. The post holder will understand the challenges of these participants' diverse responsibilities and customise their mentorship to the needs of each individual. We do not expect all citizen science researchers to already have all the skills within the scope of *The Turing Way* project. Rather that they will develop new expertise and grow in the role. The TPS Senior Researcher will structure their acquisition of new expertise and identify knowledge sharing opportunities within their teams. They will demonstrate a growth mindset and a commitment to continuous learning and development.

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The postholder will work closely with Dr Kirstie Whitaker and Prof Chris Holmes, lead investigators of the NIHR AIM RSF, and Mrs Lynsey Cross, AIM RSF Theme Lead for PPI/E and Public Engagement Officer for the Population Data Science Department at Swansea University. They will also collaborate closely with Dr Malvika Sharan, TPS Senior Researcher and co-lead investigator (with Kirstie Whitaker) of *The Turing Way*, and Dr Bastian Greshake, Open Humans Director of Research and a long term fellow at the Center for Research and Interdisciplinarity in Paris. Dr Kirstie Whitaker will be their line manager.

DUTIES AND AREAS OF RESPONSIBILITY

- Conduct original interdisciplinary academic research by contributing to existing funded projects and by pursuing your own research interests in digital infrastructure and related areas. Curate, implement and advance community practices for open source infrastructure and promote them in the research projects at the Institute.

- Foster communities of citizen scientists with lived experience of multiple long term conditions or sensory processing differences and open source developers, with a particular focus on growing the overlap between those groups. Bring together domain experts to design, adapt and build the citizen science platform and responsibly manage the data.

- The specific implementations of the co-created web platform and content moderation processes will require a combination of social and technical expertise. We do not expect the postholder to be expert in all of the following tasks, rather that they are able to identify and link up the right people from across the Turing Institute, AIM investment, Open Humans and broader PPI/E communities. Tasks that have been identified to date are:

  o Mentor volunteer open source web developers to build the citizen science platform. Support their communication with senior developers to make sure that their pull requests are easy to review and in line with project goals.

  o Ensure that volunteer contributors who have lived experience of MLTCs / sensory processing differences can give feedback on the design and development of the citizen science platform. Particularly focus on the accessibility of the platform, including the data consent and moderation processes. This is likely to include delivering digital skills training to allow all members of the PPI/E communities to engage in the co-creation of the platform.

  o Engage with researchers and policy makers across the multiple long term conditions research landscape to ensure that the platform is developing in line with their goals of delivering a health care system that can best support people from diverse backgrounds and with lived experience of MLTCs.

- Line manage a team of participatory citizen science 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 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 develop 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:

  o 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.

  o 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.

  o Represent the TPS programme at industry, academic and practitioner events and high level meetings.

  o Establish and promote cross-programme collaborations within the Institute.

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     o   Establish closer connections between the Turing and external organisations and communities from their networks.

- Catalyse connections and collaboration between researchers across the Institute, with a particular focus on bringing together teams working to involved and engage member of the public in data science projects. This could come in the form of 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.

- Be an active community member of The Turing Way project. This may include writing new content, reviewing existing chapters, or giving presentations about the project to new audiences. We expect all members of the participatory citizen science team to attend regular co-working sessions and participate in discussions on research best practices across a project lifecycle.

- 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 industry experience.	E	a
Bachelor's degree or a Master's Degree in a discipline which provides a good basis for understanding statistics, data science and programming.	E	a
Knowledge and Experience		
Experience in participatory and community-led co-creation or team science	E	a/i
Basic coding skills in any programming language.	E	a/i
Git for version control and Github or GitLab for project management.	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 and Rmarkdown).	E	a/i
Line management and matrix management.	D	a/i
Contributing to, maintaining and/or leading open source research software projects.	D	a/i
Stakeholder engagement, for instance, experience working with consortium partners, research collaborators, delivery partners, or clients.	D	a/i
Track record of delivering value for your organisation or stakeholder by making use of ethical research practices, data science, data visualisation or software engineering.	E	a/i
Knowledge of, or interest in learning about the challenges and opportunities of data-driven research.	E	a/i
Knowledge of, or interest in learning about monitoring and evaluating proposals.	E	a/i
Knowledge of, or interest in learning about facilitating research using sensitive health data, or other sensitive data, including an understanding of information governance requirements.	E	a/i
Knowledge of, or interest in learning about research governance structures and research ethics processes.	E	a/i
Communication		
Outstanding communication skills, both oral and written. The postholder will routinely be required to communicate more complex, specialist or conceptual information clearly and persuasively, presenting compelling arguments to influence.	E	a/i
Track record of publishing articles, FAIR data sets, white papers and/or open source software libraries for a diverse audience including academics, policy makers and/or software engineers.	E	a/i

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Teamwork and Motivation		
Leads and directs with responsibility for developing, communicating, and implementing action plans and objectives linked to the Instittue's strategy.	E	a/i
Responsible for workforce and financial planning.	E	a/i
Manages the relationship between teams and is able to deal with conflicting priorities. Encourages contribution and involvement from staff at all levels across the Turing.	E	a/i
Project Management & Project Delivery		
Adapts project plans and delivery processes to meet the Turing's needs and identifies ways of improving standards. Learns from feedback and takes action to resolve any complaints.	E	a/i
Actively promotes and defines performance standards that support the achievement of organisational objectives. Undertakes regular monitoring and review to ensure that standards are being met.	E	a/i
Planning and Organising		
Manages time and resources effectively. Routinely monitoring and reviewing progress to ensure effective working.	E	a/i
Manages the staffing and financial resources. Sets performance standards and formulates action plans, monitoring and reviewing progress regularly. Undertakes resource planning and budget forecasting in line with department objectives.	E	a/i
Analysis and Research		
Gathers data rigorously and conducts robust analysis, and challenge the status quo by questioning assumptions and existing knowledge. Reports findings to wider community and is able to withstand challenge by relying on evidence gathered and processes used for analysis.	E	a/i
Experience managing, structuring and analysing research data.	E	a/i
Team Development		
Routinely provides expert advice, support and training to help team members.	E	a/i
Undertakes and evaluates regular staff performance reviews and appraisals and deals with any performance issues.	E	a/i
Plans and generates training and development opportunities, evaluating outcomes and putting learning into practice for team members.	E	a/i
Other Requirements		
Commitment to meeting deadlines.	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 3546, or email recruitment@turing.ac.uk.

TERMS AND CONDITIONS

This full time post is offered on a permanent basis. The annual salary is £56,840 plus excellent benefits, including flexible working and family friendly policies, https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits

This post is also open to those that wish to join us on a part-time basis or a job share who can commit to between 50% to 100% Full Time Equivalent.

If the role is filled as a job share, hours will be semi-flexible, however some overlapping working hours will be required for communication between the Senior Researchers who job share this post, and the majority of the working week will need to have cover available on any given day.

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.

We particularly encourage applicants who:
- have experience or knowledge or understanding algorithmic bias and algorithmic oppression;
- consider themselves disabled or neurodivergent; or
- who have friends or family members who have lived experience of multiple long term conditions.

We acknowledge the importance of understanding the intersectionality of these lived experiences with experiences associated with the candidate's ethnicity, gender, sexuality, race, age and class.

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*.*