
Turing Fellow Call 2023

Call Document

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Summary

The Alan Turing Institute, the UK's national institute for data science and artificial intelligence (AI), invites applications from UK-based researchers with expertise in data science/AI to become Turing Fellows at the Institute.

Our new Turing Fellow model aims to grow the data science/AI ecosystem in the UK by supporting, retaining and developing emerging research talent, whilst contributing to the Institute's [overarching goals](#).

Turing Fellows are the next generation of world leading researchers. They have proven research excellence in data science, artificial intelligence, or a related field, and research interests aligned to the Turing's Science and Innovation priorities outlined in the Institute Strategy.

Each Turing Fellow call will focus on priority areas of strategic importance for the Institute which fellows will support and contribute to during their fellowship. Applicants for this call must have knowledge and expertise in one or more of the following areas:

1. Science and Innovation: Environment and Sustainability
2. Science and Innovation: Fundamental Research in Data Science and AI
3. Build skills for the future
4. Driving an informed public conversation

Appendix 1 provides further information and expands on each of the areas above.

The Institute is committed to building a diverse network of fellows and we encourage applicants from a range of backgrounds to apply. The call is open to researchers who hold a contract of employment with a UK university or research institute.

Turing Fellowships are designed for researchers who wish to engage with the Institute in a meaningful way and develop links and ties that continue beyond the lifetime of their fellowship (i.e. Turing Fellowships can be a springboard to more substantial engagement with the Institute).

Successful applicants will be appointed as Turing Fellows for 2 years with all fellowships commencing in January 2024.

Turing Fellowships within this call are offered on an unfunded basis with various benefits that being part of the Turing's vibrant, interdisciplinary, and collaborative research community brings. The fellowships are a development opportunity for future leaders, and researchers will need time available to maximise the impact and benefits of their fellowship.

Key Information

- Call opens for applications on 28 July 2023.
- Application period remains open until 18 September 2023.
- Turing Fellowships will start in January 2024 for a period of 2 years.
- For general and Flexi-Grant enquiries, please contact fellowship@turing.ac.uk.

About the Fellowships

What is a Turing Fellow?

Turing Fellows are the next generation of world leading researchers. They have proven research excellence in data science, artificial intelligence, or a related field, and research interests aligned to the Turing's Science and Innovation priorities outlined in the Institute Strategy. Turing Fellows are active members of the Turing community, contribute new ideas, and help grow the research capacity of the Institute. They are advocates and ambassadors for the Turing, as well as the broader UK ecosystem, and contribute to the activities at the core of the Institute's mission. Turing Fellows champion the work of the Institute, particularly regarding equality, diversity and inclusion, promote Turing skills and training opportunities, and uphold and support the Turing Values.

Turing Fellowships are offered on an unfunded basis and will start in January 2024 for 24 months.

Aim and purpose of Turing Fellowships

The Institute's Turing Fellow scheme has the following objectives:

1. Grow the AI ecosystem in the UK by supporting, retaining and developing research talent.
2. Support the growth of the Institute and its strategic goals in one of three ways:
 - Provide a pool of expertise to support the development of the Grand Challenges and their associated missions with the ability to pivot to new areas of research.
 - Provide expertise to support the Institute's 'Build skills for the future' goal via (but not limited to) co-designing materials, academic mentorship, training activities, workshops, and review/interview panels.
 - Provide research talent to support our ambitious work in 'Driving an informed public conversation'.

The fellowships offer an opportunity for researchers to engage with the Institute in a meaningful way and develop links and ties that can continue beyond the lifetime of their fellowship (i.e. they can be springboard to more substantial engagement with the Institute).

Expectations on Fellows and engagement with the Institute

Turing Fellows are proactive in their engagement with the Institute and receive benefits (listed below) in exchange for contributing to the Institute's goals and success. These are monitored, captured on an ongoing basis and via the Turing Fellow annual report. All Turing Fellows should demonstrate commitment to creating and promoting a collegiate and collaborative approach to interdisciplinary research throughout their fellowship.

Fellows are expected to contribute to the Turing in the following ways¹:

¹ We expect opportunities for involvement to arise across the breadth of the Institute and particularly in the strategic priority areas for this call. We cannot guarantee engagement with a specific Turing team, Grand Challenge, Turing Research Programme, or area of activity at this stage as this is dependent on opportunities that arise.

1. Respond to and engage with appropriate opportunities linked to one of the Institute's strategic priority areas² as they arise. This may include, but is not limited to, providing domain expertise to Turing teams, support scoping new areas of research and activity, joining Turing groups and committees, guest speaking roles, and supporting government consultations.
2. Support the Institute and contribute via 'citizenship' activities – see appendix 2 for a full list. Examples may include reviewing applications for research funding or studentships, joining review/interview panels, providing mentorship or supervision to a Turing PhD student, or supporting the organisation of a Turing event or workshop.

Where a Turing Fellowship leads to a more formal interaction with the Institute, a separate agreement (e.g. grant, collaboration, or secondment agreement) will be required and organised by the appropriate project team. Examples may include (but are not limited to) a Fellow receiving grant funding, buy-out of their time, a formal role within a Grand Challenge, Research Programme or priority area for the Institute (e.g. PI, theme lead, research leadership role).

Eligibility criteria

Turing Fellowships are aimed at established researchers with the potential to be the next generation of world leaders. They have made important contributions to their research area, (e.g. publications, patents, software development or an impact on policy), are likely leading a programme of research, and have significant postdoctoral research experience.

Applicants should consider these specifications carefully to determine their eligibility. For this Turing Fellow call, applicants must also meet the following criteria:

- Hold a contract of employment with a UK university or research institute³. The contract must cover the full duration of the fellowship and/or may be permanent, open ended or long-term rolling.
- Be conducting research in the fields of data science, artificial intelligence, or a related field.
- Have knowledge, experience and expertise that aligns with the priority areas outlined in full in Appendix 1:
 - Science and Innovation: Environment and Sustainability
 - Science and Innovation: Fundamental Research in Data Science and AI
 - Build skills for the future
 - Driving an informed public conversation
- Have the support of their Head of Department, line manager or equivalent, in order to become a Turing Fellow.
- Not normally hold a contract of employment or secondment agreement with the Institute.

There are no set timeframes for applicant experience, and we encourage all applicants to review the eligibility and assessment criteria to determine if they are eligible for this call. For

² For this call: Environment and Sustainability, Fundamental Research in Data Science and AI, Build skills for the future, Driving an informed public conversation

³ Research Institutes that are eligible to receive UKRI funding.

further details on the level of experience required for a Turing Fellowship, also review our FAQs.

The Alan Turing Institute reserves the right to reject applications without panel review that do not meet the remit and eligibility criteria of the Turing Fellow scheme.

Turing Fellow benefits

The Institute has established a strong reputation both nationally and internationally. We have built up unique assets and occupy an important niche that complements the wider data science and AI community in the UK, and we expect Turing Fellows to benefit from these during their fellowship.

The fellowship offers visibility and acknowledgement as a UK data science/AI expert both at the fellow's institution and across the Turing's networks, which can aid career progression. The fellowships aim to accelerate and support the careers of some of the brightest and most ambitious data science/AI researchers through membership of a national network that does not exist elsewhere in the UK and the benefits the fellowship provides – examples of which are below.

- Access to an interdisciplinary data science and AI research community with enhanced opportunities to showcase personal research and become well-known members of the Turing community.
- Access to a physical collaborative space in central London with no disciplinary boundaries for working and to hold meetings.
- Travel and expenses allowance for travel to the Institute in London and to members of the [Turing University Network](#) (for Turing-related activities).
- Invitations to bespoke Turing and cohort activity (e.g. networking events, Grand Challenge showcase events).
- Invitation to an annual Turing Fellow symposium.
- Develop collaborations with partners from academia, industry, government and the third sector.
- Recognised title from an established, highly reputable national and global data science and AI institute.
- Receive the regular Turing Fellow newsletter with unique updates, and bespoke opportunities.
- Opportunity to seek support from and collaborate with Turing PhD enrichment students.
- Invitation to quarterly Turing Town Hall events (hybrid).
- Invitation to a regular Turing Fellow coffee morning.
- Opportunity to set up, lead and participate in themed and multidisciplinary [Turing Interest Groups](#).
- Opportunity to lead and participate in [Theory and Method Challenge Fortnights](#) events.
- Benefit from and participate in the Turing's unique programme of events and expanded virtual engagement programme. Turing Fellows can receive reduced rates and complimentary tickets to certain events, such as [AI UK](#).
- Professional development opportunities, courses, and training (subject to availability).

Equality, Diversity and Inclusion

The Institute's mission is to make great leaps in data science and AI to change the world for

the better, and we recognise that to make such great advancements and help solve the world's problems and challenges, we need to accurately reflect the world's diverse composition and build an inclusive community. The Institute takes very seriously questions of equality, diversity and inclusion and their impact on and importance to success and excellence in our field, community and mission. The Institute is committed to actively working to embed and ensure the Institute's functions and research schemes are accessible, inclusive and diverse. Further information on the Institute's EDI work is available [here](#).

Reasonable Adjustments

The Institute recognises there may be individual circumstances which Turing staff need to be aware of. The Institute aims to accommodate specific needs and personal circumstances but are reliant on applicants sharing this information with the Institute at fellowship@turing.ac.uk. If there is information relevant to your application that the Institute may need to consider when facilitating the review process, please contact us using the details above to discuss. This should be done early in the process or updated when circumstances change. We will treat any information you disclose to the Institute as sensitive and will handle it in line with the Data Protection Act 2018. You can find out more information about how the Institute handles your personal data in our [privacy notice](#). Information will only be used to arrange reasonable adjustments and will not be used to assess your application.

Further information relating to communicating your requirements can be found in the Frequently Asked Questions document (FAQs).

Location and Host Organisation

Turing Fellows will be based in the UK and be employed by a UK university or research institute for the duration of the Fellowship. Turing Fellow activities can often take place remotely and from the employing institution, with optional physical attendance at the Turing offices in London as and when required.

Applicants based at universities in the [Turing University Network](#) are strongly encouraged to contact their [Turing liaison](#) to make them aware of their application.

Basic Terms and Conditions

Turing Fellows will be appointed for a period of two years, commencing in January 2024.

Turing Fellowships within this call are offered on an unfunded basis with various benefits that being part of the Turing's vibrant, interdisciplinary, and collaborative research community brings. The fellowships are a development opportunity for future leaders, and researchers will need time available to maximise the impact of their fellowship.

Fellows can claim reasonable travel and subsistence-related expenses as part of their fellowship (Turing Expenses Policy will apply).

All appointed Turing Fellows sign a set of Terms and Conditions (T&Cs). These are signed in a personal capacity and the Institute understands Fellows may need to check with their employing institution before signing. The T&Cs are intentionally light touch to avoid complication. They are designed to provide Turing Fellows with access to the Institute and a Turing title. Where a Turing Fellowship leads to a more formal interaction with the Institute, a

separate agreement (e.g. grant, collaboration, or secondment agreement) will be required and organised by the appropriate project team.

Draft Turing Fellow Terms and Conditions are [available here](#). Any final changes to the draft terms and conditions will be highlighted to successful applicants prior to signing.

All Turing Fellows are required to complete a Turing Fellow Annual Report after 12 months and towards the end of their fellowship period.

Application Process and Timeline

Process	Dates and deadlines
Applications open	28 July 2023
Applications close	18 September 2023 (12:00 midday BST)
Offers to successful applicants and begin onboarding process	w/c 6 November 2023
Turing Fellowships commence	January 2024

How to apply

Applicants apply through the Institute's Flexi-Grant application portal – accessible on the Turing Fellow call webpage. Applicants may be required to create a Flexi-Grant account if they do not have one already prior to starting an application.

All applications must be submitted on Flexi-Grant by **18 September 2023 12:00 midday BST**.

Applicants may wish to review the FAQs prior to starting their application.

Applicants need to secure the approval of their Head of Department, line manager or equivalent, prior to applying, and will indicate they have done so as part of the application process. A university/employer letter of support **is not required**.

The Institute will conduct an eligibility check of all received applications before progressing eligible applications to the review stage and reserves the right to reject applications without panel review that do not meet the remit and eligibility criteria of the Turing Fellow programme.

When completing an application, all applicants will be asked to provide:

- A Research Statement, outlining how they have made important contributions to their research area, are leading a programme of research, have significant postdoctoral research experience, and how they have contributed to the national and international data science/AI landscape (max 400 words).
- Their reason(s) and motivation(s) for applying, and how the fellowship will aid their career (200 words).
- A Statement of Interest, outlining how their expertise aligns to the strategic priority areas of this call and how they will contribute (max 500 words).

Applicants may wish to access the Flexi-Grant form, read the additional guidance on each of the areas above, prepare their responses separately and then copy the text into the application form.

Documentation Required

The Flexi-Grant form requires applicants to upload a CV including publications relevant to this call. A full history of publications is not required. CVs should be submitted in PDF format and be a maximum of 2 sides of A4. CVs longer than two pages cannot be accepted.

CVs should outline an applicant's educational and employment history. Please include details of relevant training and professional development activities undertaken as well as any prizes or awards, membership of any professional bodies and publications relevant to this call. Applicants do not need to include contact details or details of referees.

Assessment stage: Eligibility checks and panel review

All applications will be checked against the eligibility criteria for this call above, and then assessed by a review panel against the assessment criteria below.

Recommendations for Turing Fellowships will be approved by the Institute's Executive Committee.

In the event of this opportunity being substantially oversubscribed as to be unmanageable, the Institute reserves the right to modify the assessment process.

Assessment Criteria

Applicants should consider the following assessment criteria when writing their application. Responses included within the application form will be assessed by a review panel against the following essential criteria:

Criterion	Essential/ Desirable	Weighting
1. A strong track record delivering outstanding research and making important contributions to the fields of data science, AI, or a related field	Essential	20%
2. Demonstrate a significant contribution to the national and international data science/AI landscape.	Essential	20%
3. Demonstrate commitment to creating and promoting a collegiate and collaborative approach to interdisciplinary research.	Essential	20%
4. Demonstrable alignment with a specific priority area ⁴ outlined in Appendix 1 and a desire to contribute to the success of the Institute in this area.	Essential	40%

Contact Details

For specific questions about the fellowships or the application process on the Flexi-Grant system, please contact the Institute via fellowship@turing.ac.uk.

⁴ Either Environment and Sustainability, Fundamental Research in Data Science and AI, Build skills for the future, or Driving an informed public conversation.

Appendix 1: Supporting the strategic priority areas of the Institute

Applicants are required to address at least one of the following Institute priority areas as part of their application:

1. Science and Innovation: Environment and Sustainability
2. Science and Innovation: Fundamental Research in Data Science and AI
3. Build skills for the future
4. Driving an informed public conversation

Further detail is provided on the following pages.

1. Science and Innovation: Environment and Sustainability

Section 1: Priority research areas for Environment and Sustainability Grand Challenge

Automate biodiversity monitoring to enable nature recovery

- Automate biodiversity monitoring through the fusion of domain knowledge with data
- Develop digital solutions to support effective wildlife conservation strategies
- Embed nature and habitat restoration in net zero transition

Optimising infrastructure for sustainable use of natural resources

- Optimising global transport, manufacturing and critical infrastructure for a low carbon world
- Digital intelligence and automation for sustainable agriculture
- Energy grid and infrastructure networks of the future
- Industry decarbonisation built around long-term investment in emerging tech

Deliver localised environmental predictions to mitigate the impacts of climate change

- Develop fast data-driven environmental forecasting capabilities
- Reduce uncertainties and costs of sensor deployment through intelligent sensor placement
- Provide climate-relevant decision support information and early-warning capabilities
- Climate prediction for risk assessment

Model interventions to achieve sustainable cities and regions for a net zero world

- Develop data science and AI learning methods in the context of mobility, active lifestyles, urban environments and population health
- Digital Twins for land use, infrastructure and services
- Urban air quality, health and liveability
- Configure city regions to meet sustainable development goals (SDGs)
- Population estimation and scenario projection

2. Science and Innovation: Fundamental Research in Data Science and AI

Section 2: Priority research areas for Turing core capability in Fundamental Research in Data Science and AI

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| Foundation models | <ul style="list-style-type: none">• Benchmarking & certifying foundation models• Uncertainty quantification in foundation models• NLP• Multi-modal foundation models• Fine-tuning foundation models• Building models from sparse data sets• Applications of foundation models• Verifying models |
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| Game theory | <ul style="list-style-type: none">• Equilibrium computation• Mechanism design• AI & group decision-making |
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| Probabilistic programming | <ul style="list-style-type: none">• Compositionality of probabilistic programs• Parallelization of probabilistic programs• Programmable inference• Semantics of probabilistic programs• Verification of probabilistic programs• Probabilistic programs and neural nets |
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| Neuro-symbolic computation | <ul style="list-style-type: none">• Hybrid ML/symbolic systems• Ensemble models |
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3. Build skills for the future

If an applicant aligns their application to this priority area, they should focus primarily on 'substantive contributions' but take note of and may wish to reference 'smaller contributions'.

Those applying primarily to this priority area should focus on **minimum one** 'substantive contribution' listed below.

Further detail is provided on the application form.

Section 3: Priority areas within 'Build skills for the future' theme		
Areas of work	Substantive contribution	Smaller contributions
Co-creation of learning interventions in line with Turing's Science and Innovation strategy	<ul style="list-style-type: none"> • Development of learning material (e.g. online learning course, case study, group project work, structured discussion session). • Support the adaptation of existing learning content, and / or building learning pathways that link different learning activities for well-defined audiences. 	<ul style="list-style-type: none"> • Review learning material (e.g. courses in Turing Online Learning Platform)
Facilitation and scientific advice	<ul style="list-style-type: none"> • Advocating for and facilitating university groups to co-create with Turing (i.e. together with CDT, supporting a Data Study Group at the University) • Consult to identify needs and scope out projects to develop new learning materials or adapt existing ones. • Provide expertise from previous experience and/or collaboration with industry and government to inform and scope skills offers aimed at senior leaders 	<ul style="list-style-type: none"> • Speaker, scientific expert or session host at events (e.g. programme introduction sessions, CDT PhD conference) • Facilitator of pre-designed (blended) learning discussion sessions (e.g. in line with topic covered in the Online Learning Platform) • Contribute to event scoping e.g. PhD CDT conference sessions
Pedagogic and Skills policy contribution	<ul style="list-style-type: none"> • Support the growth and delivery of the Data Science & AI Educator's Programme 	<ul style="list-style-type: none"> • Advocate for effective, up-to-date and community focused pedagogical approaches to teaching data science and AI

	<ul style="list-style-type: none"> • Contribute to the Turing's National Skills priority areas e.g. Skills Framework, Data Skills Taskforce priority areas 	(e.g., champion open science)
Mentoring and reviewing applications	<ul style="list-style-type: none"> • Longer term mentorship e.g. PhDs placement students, Turing Research Fellows, participants of AI educators programme, DSG PIs 	<ul style="list-style-type: none"> • Review PhD applications • Application mentoring for Turing's PhD placement programmes (e.g. Enrichment & Turing Internship Network) • Provide feedback to Turing Research Fellows on independent research work ideas.
Contributing to culture shift in DS/AI	<ul style="list-style-type: none"> • Contribute to the design and delivery of initiatives to clarify career pathways in data science and AI 	<ul style="list-style-type: none"> • Showcase a wider set of career opportunities within DS/AI
Widening Participation	<ul style="list-style-type: none"> • Community champion to an underrepresented group e.g. raising awareness of Turing skills offer, support inclusive by design approach in Turing skills offer, co-create new interventions, (application) mentoring, career talks. 	

4. Drive an informed public conversation

We are looking for researchers who can support two of our most ambitious strategic goals in public engagement.

This call is specifically geared towards developing a community of best practice and expanding two-way public involvement in data science and AI research across the Turing network. The Institute undertakes disseminative public engagement, for example blogs and lecture series, but opportunities to get involved in these activities at the Institute are managed separately and should not be considered as part of your application.

Section 4: Priority areas within 'Drive an informed public conversation' theme		
Strategic goal	What do we mean by this?	Skills and experience
<p>1. Develop and share best practice, standards and goals for public engagement across the data science and AI ecosystem</p> <ul style="list-style-type: none"> ○ Establish a formalised community of organisations and researchers with an interest in public engagement in data science and AI that draws from industry, academia, government and civil society. ○ Co-develop an agreed set of goals and best practice for public engagement in AI and data science and establish ways to share outputs and pool resources. ○ Co-develop and publish a shared understanding of what baseline AI literacy is needed across the population. 	<p>Public perceptions of AI often range between fear and hype and are largely driven by the media. We seek to provide balance to the conversation, reframing the narrative to risk and opportunity. We recognise one organisation does not have all the answers, but as the national institute for data science and AI, we are uniquely positioned to convene and collaborate across the UK, bringing together the brightest minds to not only advance data research, but to collectively set the standards for everyone working in this space.</p> <p>We are looking for people who can support this mission - to bring together experts in the field of public engagement in data science and AI, to facilitate discussions with other practitioners and stakeholders, and to support other organisations across</p>	<ul style="list-style-type: none"> ○ Experience developing and implementing Equality, Diversity and Inclusion (EDI) & public engagement best practice in research projects ○ Knowledge and understanding of public engagement within the data science/AI ecosystem ○ Experience developing and leading public participation in research projects ○ Skills and experience developing learning materials for lay audiences ○ Knowledge and understanding of UK priorities in terms of AI literacy across a range of fields, such as education, future of work, cybersecurity and online safety, etc.

	<p>the UK to embed these findings within their own practices.</p>	
<p>2. Lead on incorporating an understanding of public attitudes to AI into the design, development and deployment of data science and AI.</p> <ul style="list-style-type: none"> ○ At least three areas of the Institute's own data science and AI initiatives informed by public participation, for example people's panels or citizen juries. 	<p>Public involvement and participation are a vital part of research. The Turing recognises the importance of collaborating with public stakeholders to ensure that research and policy has been developed in line with the needs and priorities of UK citizens, as well as reducing negative consequences on marginalised communities.</p> <p>We are keen to hear from people who are looking to involve public voices in their research - either through co-production, deliberation, or consultation - using open, accessible, and inclusive methods.</p>	<ul style="list-style-type: none"> ○ Strong track record in public involvement in research, such as organising and delivering peoples' panels, co-produced research or citizen science projects ○ Understanding and proven track-record of embedding EDI and accessibility principles across research and engagement work. ○ Knowledge and understanding of ethics in data science and AI ○ Experience working collaboratively with diverse teams and stakeholders ○ Expertise in participatory research methods

Appendix 2: 2023 Turing Fellow citizenship activities

Turing Fellows are highly engaged with the Institute. They support and contribute via a range of 'Citizenship' activities. These may include:

- Support the organisation of a Turing event/workshop/seminar
- Provide academic mentorship/supervision to Turing PhD/enrichment students. This includes providing careers advice and support writing proposals.
- Support Turing committees/steering groups
- Review applications for research funding
- Review applications for studentships
- Interviewer on panel for research funding or studentships
- Contribute news stories or cases studies for the Turing website/Intranet/newsletters
- Support the Institute with ethical practices – e.g. the Turing Research Ethics (TREx) process
- Lead/join Turing Interest Groups
- Support a Turing [Data Study Group](#)
- Support Turing staff at meetings with partners/industry/government
- Join a Turing EDI Network Group