Postdoctoral Research Associate – Text Analysis and Causal Inference

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 Public Policy research programme works alongside policy-makers to explore how data-driven public service provision and policy innovation might help to solve long running societal problems. We also work hand-in-hand with public sector organisations and citizens to develop practice-based ethical standards for the responsible development and use of data science and AI. Our dynamic group works closely with the UK government, as well as international organisations like the United Nations, the Council of Europe, and the European Commission.

As part of its growing leadership in data science and AI for the public sector, the Public Policy programme is strengthening its analytic capabilities by setting up a substantial programme of research in modelling for policy. This programme of research concentrates on studying pressing societal issues that could benefit from policy interventions and on constructing robust, empirically-informed models to identify the most beneficial policy measures. Our aim is to build tools and models that government partners can use to create better public policies.

ROLE PURPOSE

We are looking to hire an outstanding researcher with a background at the intersection of text analysis (e.g., natural language processing), large-scale data, and causal inference (e.g., do-calculus and directed-acyclic graphs) to support various research projects in the area of modelling for policy. The post-holder will join the Public Policy programme and will be a part of a multidisciplinary team of data scientists and modellers focused on developing a new programme of research in policy modelling.

The aim of this role is to construct novel large-scale datasets of public interest (e.g., news corpus linked to macroeconomic data, social-media content linked to government documents, open-spending data linked to development indicators, etc.), and to build statistical causal models that can complement other streams of work in the area of modelling for policy. Given the growing international reputation of The Alan Turing Institute, knowledge in one or more major languages, other than English, is desirable. The candidate will have experience in sourcing different types of large-scale datasets (this may include non-structured ones), as well as in pre-processing, analysing, and specifying and estimating statistical causal models through methods such as do-calculus. The PDRA will also engage with government stakeholders, so having some experience regarding the viability and limitations of policy interventions is ideal. They will report to the Public Policy programme's Head of Computational Social Science Research and will work closely with the other members of the research team.

DUTIES AND AREAS OF RESPONSIBILITY

- To construct novel large-scale datasets of public interest and to build statistical causal models.
- To identify and curate data sources that can be used to calibrate/estimate and validate the models.
- To translate the results from these models into intuitive lessons for policy-makers.
- To work with other Postdoctoral Research Associates across the Policy Modelling research group and the Public Policy programme.
- To develop work plans to ensure timely delivery of objectives and assist with quarterly grant reports.
- To build and maintain relationships with policy-makers and socio-economic modelling groups as part of the research project's external engagement strategy.
- To prepare research outputs that are tailored to a diverse audience, ranging from policy-makers to academic researchers, civil society, and the general public.
- To present papers and research outputs at external conferences and events.

OTHER DUTIES

- To oversee the work of other Postdoctoral Research Associates who are conducting research in related areas.
- To define the research direction in collaboration with the Head of Computational Social Science Research.
- To take the lead on writing up findings as they emerge, producing reports, and developing publications in peer reviewed journals, in collaboration with the research team.

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.

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)**
Education/Qualification		
A PhD or equivalent level of professional experience in any quantitative discipline related to socioeconomic systems, statistics, computer science, or computational social sciences.	E	A
Knowledge and Experience		
A solid track record in innovative applications of tools such as natural language processing and do-calculus.	E	A I
Experienced in working with textual large-scale datasets from various sources and formats.	E	A I
Expertise in different text-analysis computational methods such as Natural Language Processing and Topic Modelling.	E	A I
Expertise in causal-inference methods and tools such as directed acyclic graphs and do-calculus.	D	A I
Experience in verifying and debugging model code, and in using collaborative tools such as GitHub, GitLab and Docker.	D	A I
Experience with complementary machine learning methods that could be suitable for data augmentation, normalisation, and imputation.	D	A I
In addition to English, working knowledge on another major language.	D	I
Teamwork and Motivation		
A proven ability to collaborate successfully in a multidisciplinary environment and to manage delivery of projects.	E	A I
Liaison and Networking		
Experience in interacting with policy-makers and translating data-driven findings into meaningful insights and policy-focused reports.	D	A I
Analysis and Research		
A record of scientific publication, which may include journal articles, book chapters, and scientific advisory reports/white papers, that is suitable to career stage and appointment level.	E	A
Excellent writing skills and a proven ability to communicate research findings to diverse audiences.	E	A
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 Rules of the Game
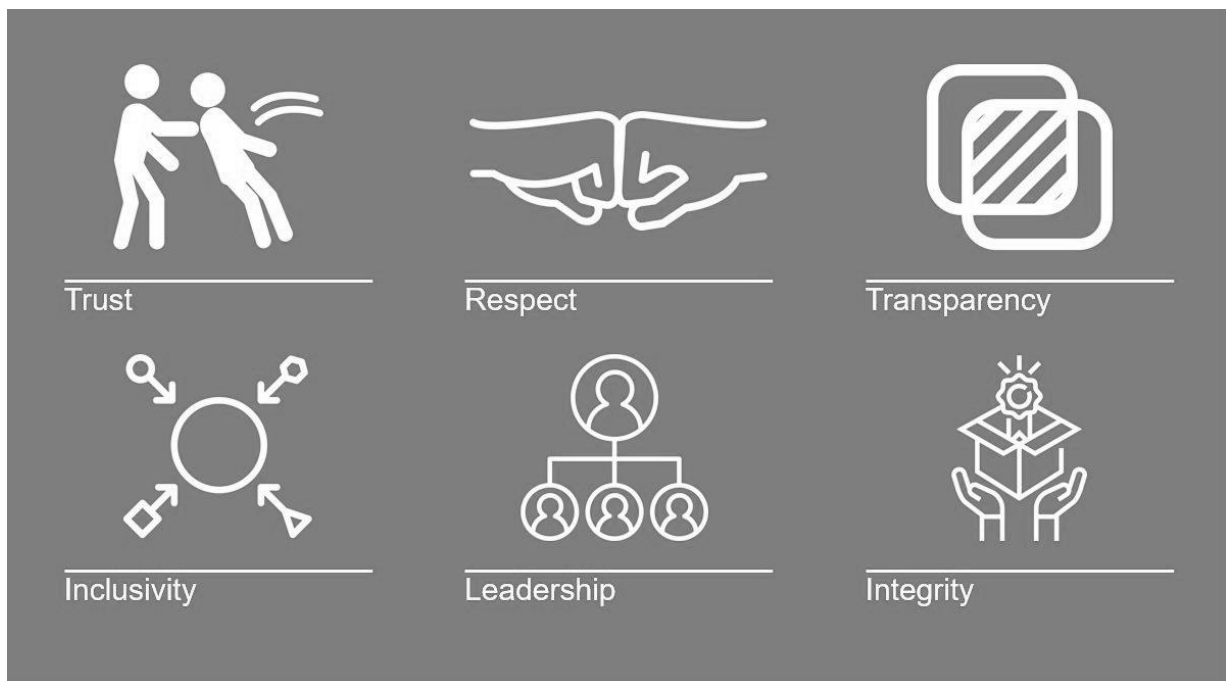
Respect – We treat everyone with respect, dignity and kindness and acknowledge the experiences, skills and contributions of others.
Trust - We communicate openly and honestly to support an environment where we have trust in each other.
Transparency – We seek to ensure that everyone understands the how and the why of our decisions and actions. We take on board to feedback when those decisions are challenged.
Inclusivity – We are committed to continuously learning how to be more inclusive by listening to those facing barriers.
Leadership – We recognise creating an inclusive, diverse and equitable institute requires leadership from all. We stand up and speak out when change is needed.
Integrity – We recognise that how we work is as important as our outputs and seek to exemplify best practice in all our decisions.

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 3970 2148 or 0203 862 3340, or email recruitment@turing.ac.uk.

TERMS AND CONDITIONS

This is a full-time post on a 2-year fixed term contract length. The annual salary is £37,000 to £42,000 (dependent on skills and experience) plus excellent benefits, including flexible working and family friendly policies, https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits.

Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant within a salary of £34,500 per annum.

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 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*.*