

The Alan Turing Institute

Research Associate, Living with Machines

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.

THE ROLE

The team is looking for a Research Associate, Living with Machines to work on the nineteenth-century census data. The candidate may be a historian with a background in demography, or a digital humanist or data scientist who has worked on historical or contemporary population data. Our primary aim is to find a colleague who can think critically about how the digitised, machine-readable census enumerators' returns can allow us to understand the impact of technological change on the lives of ordinary people.

As Research Associate on the Living with Machines Project you will work closely with the project PI (Prof Ruth Ahnert), and the wider inter-disciplinary team based at the Alan Turing Institute and the British Library. You will play an active part in all aspects of research from data preparation, to the development of research questions, modelling and analysis, and writing up/ publication. This is a collaborative research role and so it is crucial that you enjoy working with others, and are responsive within an iterative research process.

We hope that the appointed candidate will develop to take ownership of a key strand of work on the project, under the mentorship of the PI and Co-Is. Depending on your research background and career path, you may also have the option to be aligned with the Turing's Research Engineering Group. This link would build collaborative relationships with other practitioners of cutting-edge algorithms and approaches, usable software libraries, reproducible analyses and workflows, and high performance computational environments.

THE LIVING WITH MACHINES PROJECT

The AHRC-funded project, 'Living with Machines', is looking for a Research Associate to join its team working on the social and cultural impact of mechanisation on the lives of ordinary people during the

long nineteenth century, to work especially on digitised, machine-readable household-level census data.

'Living with Machines' proposes a new research paradigm – a radical collaboration between historians, data scientists, geographers, computational linguists, and curators - to harness the growth of digitised archives, and model the effects of mechanisation on ordinary people at the dawn of the modern era. The project, which began in late 2018, uses computational techniques and very large datasets in order to ask questions about the ways in which technology altered the very fabric of human existence on a hitherto unprecedented scale. The project exploits existing corpora of digitised sources (including newspapers, census data, maps, autobiographies, books and journals), as well as digitising its own materials (including newspaper press directories, the Road Acts, and further newspapers). By developing tailored computational approaches and a philosophy of interdisciplinary collaboration the team have developed both a data-driven approach to history, and a human-driven approach to data science.

'Living with Machines' is carried out in partnership between the Alan Turing Institute, the British Library, and the Universities of Cambridge, East Anglia, Exeter and London (QMUL). The project is led by Ruth Ahnert (QMUL), and co-led by David Beavan (The Alan Turing Institute), Emma Griffin (UEA), James Hetherington (UKRI), Jon Lawrence (Exeter), Maja Maricevic (BL), Barbara McGillivray (The Alan Turing Institute and Cambridge), Mia Ridge (BL), and Alan Wilson (The Alan Turing Institute).

DUTIES AND RESPONSIBILITIES

The Resaearch Associate, Living with Machines will help oversee the processing of census and work closely with the project's data scientists to ensure high quality of the processed digital datasets. The post holder will take lead responsibility for a substantive strand of enquiry using computational methods.

The Research Associate, Living with Machines will collaborate on generalisable models for tracking change over space and time. A key aspect of the role will be working closely with the wider team to develop methods that improve our ability to link data from the census enumerators' returns to other digitised sources including newspapers, maps and trade directories. The post holder will play a collaborative role in building the code base and writing joint conference papers and publications arising from the project.

PERSON SPECIFICATION

Essential:

- A PhD (or equivalent experience and/or qualifications) in a relevant area, which might include, but is not limited to, digital humanities, data science, or history;
- Experience with computational processing of demographic data;
- Fluency in at least one programming language (we particularly work in Python);
- Ability to lead one's own work, including planning and execution, and to prioritise work to meet publication and other deadlines;
- A commitment to collaborative research;
- Excellent written, verbal and graphical communication skills including the ability to present complex or technical information in an understandable form to a non-technical audience.

Desirable:

- Knowledge of nineteenth-century history;
- Experience of working with census data;
- Experience of working with one of the other corpus-types with which we are working, such as maps or, historical newspapers;
- Experience working with large research data sets and (semi) structured data;

- 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);
- Experience of automated testing, software quality assurance and continuous integration of code review in a distributed team;
- Evidence of high-quality publication(s) in a relevant field (published or in-press) commensurate with your career stage;
- Experience of research collaboration including co-writing papers and articles.

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, covering letter and contact details for your referees. If you have questions about the role or would like to apply using a different format, please contact them on 020 3862 3575, or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: 14 September 2020

TERMS AND CONDITIONS

This full-time post is offered on a fixed-term basis, until 31 March 2023 with potential to be extended until 31 August 2023. The annual salary is £35,000 to £41,000 (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>

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, gender reassignment, marital and civil partnership status, pregnancy, religion or belief or sexual orientation. Reasonable adjustments to the interview process can also be made for any candidates with a disability.

Please note all offers of employment are subject to continuous eligibility 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.