Research Associate in Multiphase Systems

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 postholder will work as part of the EPSRC Programme Grant PREMIERE (PREdictive Modelling with QuantIfication of UncERtainty for MultiphasE Systems) and will be part of the Data-Cenric Engineering programme at The Alan Turing Institute. It will be expected that the post-holder will interact closely with the Data-Centric Engineering programme, Imperial College London and associated academic and industrial partners.

ROLE PURPOSE

To undertake and disseminate internationally leading research into the development of a range of the next generation data driven models and applications to healthcare (Healthy Nation), energy (Resilient Nation), manufacturing and digital technologies (Resilient Nation, Productive Nation) as areas to drive economic growth in the context of the PREMIERE project. The Research Associate will collaborate with and strengthen the multi-disciplinary team of researchers already in place working on closely related projects. Ultimately the post holder will contribute to the delivery of a next generation data driven models including reduced order models, data assimilation and machine learning.

The postholder will develop computational methods to fuse data-driven and physics-driven methods for cross-sector challenges involving digital twins.

DUTIES AND AREAS OF RESPONSIBILITY

- To develop machine algorithm and applications.
- To prepare publications for international journals when suitable.
- To present the work at national and international conferences.
- To report periodically on the progress of the work at meetings.
- To actively participate in the research activities.
- To ensure the validity and reliability of data at all times
- To maintain accurate and complete records of all findings
- To provide advice to other staff and students
- To develop contacts within the College and the wider community
- To promote the reputation of the Group, the Department and the College

OTHER DUTIES

- To undertake any necessary training and/or development
- To undertake appropriate administration tasks
- To attend relevant meetings
- Teaching may be required as part of collaboration work

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

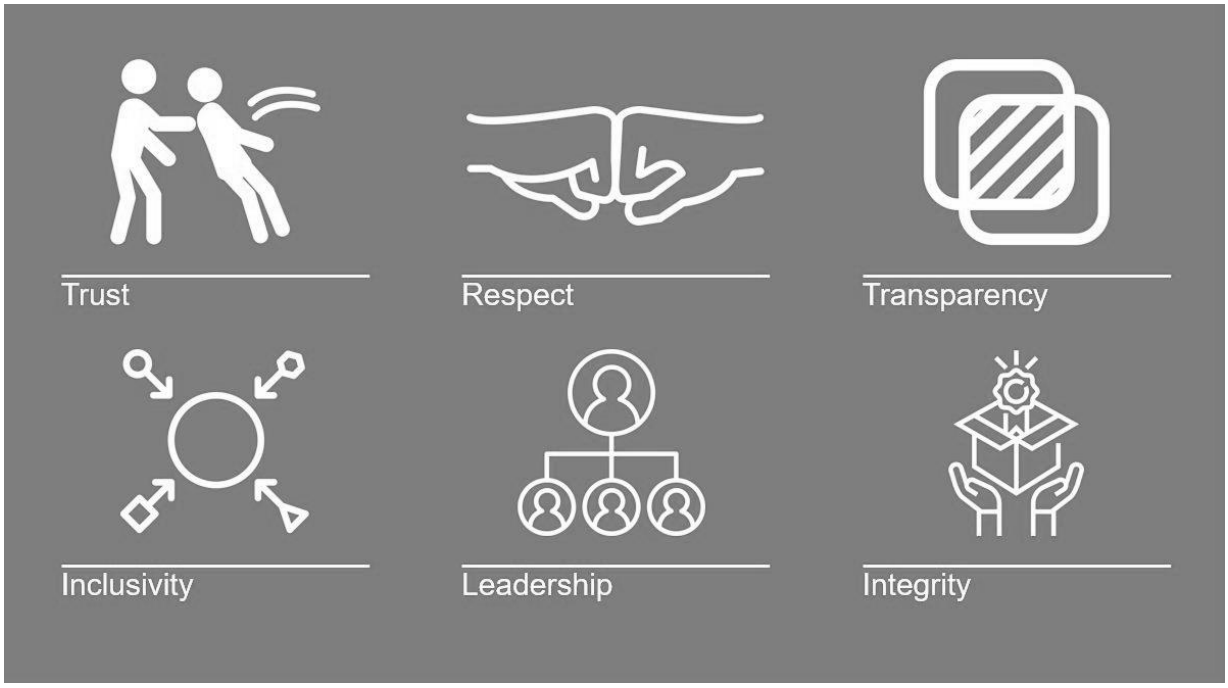
PERSON SPECIFICATION		
Skills and Requirements Post holders will be expected to demonstrate the following	**Essential (E)** **Desirable (D)**	**Tested at application(a)** **Tested at interview (i)**
Education/Qualification		
Hold a PhD (or equivalent professional experience) in Engineering, applied mathematics, computer science or a closely related discipline.	**E**	**A**
Research Assistant level: close to completing a PhD in Engineering, applied mathematics, computer science or a closely related discipline.	**E**	**A**
Knowledge and Experience		
Background in Uncertainty quantification approaches.	**E**	**A, I**
Experience of integrations of machine learning with data assimilation	**E**	**A, I**
Experience of modern programming in languages including Fortran, C++ and Python.	**E**	**A, I**
Knowledge of the open-source software in machine learning.	**E**	**A, I**
Experience working within substantial scientific computational projects and large multi-disciplinary environments.	**E**	**A, I**
Proven background in programming; knowledge of machine learning and/or reduced-order modelling.	**D**	**A, I**
Communication		
Excellent verbal communication skills and the ability to deal with a wide range of people.	**E**	**I**
Excellent written communication skills and the ability to write clearly and succinctly for publication.	**E**	**A**
Liaison and Networking		
Ability to relate to other researchers and students with a variety of backgrounds in an academic context and to work as part of a team.	**E**	**I**
Ability to direct the work of a small research team and motivate others to produce a high standard of work.	**D**	**A, I**
Decision Making		

Ability to exercise initiative and judgment in carrying out research tasks.	**E**	**I**
Initiative and Problem Solving		
Be highly motivated and able to quickly develop skills necessary to achieve broad project goals.	**E**	**A, I**
Ability to organise and prioritise own work in response to deadlines with minimal supervision.	**E**	**A, I**
Creative approach to problem-solving.	**D**	**I**
Analysis and Research		
Ability to carry out original research and to produce published research papers.	**E**	**A**
Able to plan and organise research work under own initiative.	**E**	**A, I**
A developing track record in producing high quality academic publications. Ability to write research reports and papers in styles accessible to both academic and lay audiences.	**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**

The Alan Turing Institute

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 3862 3575 or 0203 862 3340, or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: Wednesday 15 September 2021 at 23:59.

TERMS AND CONDITIONS

This full-time post is offered on a fixed term basis until 31 October 2023. The annual salary ranges from £37,000-£42,000 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 at a salary of £34,500 per annum.

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***.***