The Alan Turing Institute

Programme Manager, Turing-NATS Prosperity Partnership

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

Programme Management

The Alan Turing Institute has ten Programmes of scientific research in key areas of AI and data science, each led by a Programme Director. There are also a small number of significant programmes of activity which sit across several research Programmes.

This role sits within the Institute's Programme Management directorate, which is responsible for the management and delivery of these programmes in support of the senior academic Programme Directors. The team oversees millions of pounds of data science and AI research, training and knowledge exchange programme initiatives in these programmes, ensuring they are managed to business requirements, specification, time and budget.

There are a number of Programme Managers within the team, usually focussed on one research Programme or programme of activity, but who may provide programme management capabilities and support to other projects or activities from time to time as required. Programme managers are not permanently attached to programmes and may be moved to other research programmes in-line with business needs, and may have the opportunity to support other programmes, both ad-hoc or more formally. The postholder will be recruited initially into the role of Programme Manager to focus on the Turing NATS Prosperity Partnership .

The Turing-NATS Prosperity Partnership

Advancing Probabilistic Machine Learning to Deliver Safer, More Efficient, and Predictable Air Traffic Control (Project Bluebird)

Project Bluebird is a partnership between NATS and The Alan Turing Institute, supported through a very recently announced Prosperity Partnership investment from EPSRC.

The Turing and NATS have been working together since 2018, on a research project https://www.turing.ac.uk/research/research-projects/decision-making-under-uncertainty-air-traffic-control and on two Turing

Data Study Group challenges. For more information about the impact of the collaboration so far please see https://www.turing.ac.uk/research/impact-stories/putting-ai-air-traffic-control

The collaboration is now embarking on this new programme of research under the Prosperity Partnership award, led by Tim Dodwell (Turing AI Fellow at University of Exeter) with Evelina Gabasova (Turing Principal Research Data Scientist), Mark Girolami (professor at University of Cambridge [also Turing Programme Director for Data Centric Engineering programme]), Richard Everson (Professor of Machine Learning at University of Exeter and Turing Fellow), Edmond Awad (Assistant Professor at University of Exeter), Adrian Weller (Turing Programme Director for the AI programme), and our partners at NATS including Richard Cannon (Research Lead).

The ambition of this partnership between NATS and The Alan Turing Institute is to develop the fundamental science to deliver the world's first AI system to control a section of airspace in live trials.

The collaborative research will take a hierarchical approach to air traffic control (ATC) by developing a digital twin alongside a multiagent machine-learning control system for UK airspace. Furthermore, the partnership will develop technical approaches to deploy trustworthy AI systems, considering how safety, explainability and ethics are embedded within our methods, so that we can deliver new tools which work in harmony with human air traffic controllers in a safety-critical environment.

Little has changed in the fundamental infrastructure of UK airspace in the past 50 years, but demand for aviation has increased a hundredfold. Aviation 2050, a recent government green paper, underlines the importance of the aviation network to the prosperity of the UK to the value of £22 billion annually. Yet our nation is at risk without rapid action to modernise our airspace and control methods, to ensure they can handle a future increase in UK passenger traffic of over 50% by 2050 and new challenges arising from unmanned aircraft, both against a backdrop of increasing global pressures to transform the sector's environmental impact.

The augmentation of live air traffic control through the use of AI agents which can handle the complexity and uncertainties in the system has transformative potential for NATS's business. This will positively impact live operations, as well as a research tool and training facility for new ATCOs. Correspondingly, NATS's research vision is to exploit new approaches to AI that enable increases in safety, capacity and environmental sustainability while streamlining air traffic controller training.

The anticipated benefits of AI systems to air traffic control have come at a critical time, providing us with an opportunity to respond effectively to the unprecedented challenges which arise from a triad of crises: the coronavirus 2019 (Covid-19) pandemic, Brexit and global warming. The UK must develop independent technical advances in the sector, without compromising sustainability targets.

The Alan Turing Institute is positioned at the rapidly evolving frontiers of probabilistic machine learning, safe and trustworthy AI and reproducible software engineering. Matching this with the world-leading expertise of NATS, supported by a world-first data set of more than 20 million flight records, means that this partnership is in a unique position to build the first multi AI agents system to deliver tactical control of UK airspace.

ROLE PURPOSE

Programme Managers oversee and manage delivery of research projects within the designated programme/s, within funding parameters and to meet agreed delivery milestones and impact objectives.

The post holder plans, organises and communicates the start-up of individual projects and initiatives and is responsible for oversight of ongoing activities within the Programme. Funding may originate from Research Councils, external partners and sponsors, or Turing core funding.

Programme Managers report either to a Senior Programme Manager or the Director of Programme Management, and may have line management responsibility for one or more Research Project Managers.

Their relationships are broad and varied, spanning a diverse team of academic research and business staff within the Institute, together with researchers and operational and senior stakeholders within partner organisations (both university partners and funding partners).

This post holder will manage *Project Bluebird*, the Institute's Turing-NATS Prosperity Partnership programme of research, and coordinate interactions with NATS and funders EPSRC, as well as other project partners and academic collaborators, in collaboration with colleagues in Partnerships team. The Programme Manager role is responsible for facilitating smooth

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operational links between the partner universities and research institutes as well as close working within The Alan Turing Institute to deliver high-quality research projects, research programmes, and knowledge exchange in data science and AI.

The role will work closely with:

- The Principal Investigator and Co-Investigators, who provide scientific leadership for the programme, and rely on programme management services.
- Senior Programme Managers, Programme Managers, Research Project Managers and researchers across Turing Programmes, especially with colleagues on programmes to which DCE is aligned.
- Researchers active within the programme including Research Engineering Group colleagues.
- The functions in the COO's office, including Finance, HR and Recruitment, Legal, Training, Academic Engagement, Events, Communications.
- Partnerships team, who initiate and nurture non-academic partnerships, shape research projects with partners, negotiate collaborative research contracts, funding and data sharing arrangements.
- Strategic and Project Partners/Funders, who are important stakeholders in post-award delivery and where the effective relationship management and timely reporting provided by Programme Management maximise the opportunity to grow and further build partnerships.
- Universities & other research employers, to formalise how researchers will be engaged and funded, working with local Research Offices or HR teams

DUTIES AND AREAS OF RESPONSIBILITY

- Oversee the delivery of a programme of millions of pounds of data science and AI research, training and knowledge exchange programme initiatives, ensuring they are managed to business requirements, specification, time and budget.
- Provide support, advice, and challenge to the PI and Co-Is in the implementation of robust programme management processes and protocols.
- Ensure the programme complies with Institute policies and governance.
- Responsible for performance management and professional development of one or more Research Project Managers (where applicable).
- Work with the Programme Director and other colleagues to shape the programme strategy and set, implement, and regularly review programme objectives and activities, in alignment with the Institute's strategies.
- Foster, grow and develop the research community engaging with the programme through activities that meet the mutual needs of the programme and the research community.
- Manage the budget for the programme, which includes estimating proposal/project costs, forecasting, tracking actuals, and reconciliations.
- Highlight impact, outcomes, outputs of the programme and promote its successes with stakeholders.
- Monitor all activities, review risks, issues and progress, taking actions or escalating as necessary to ensure minimum impact on programme.
- Deliver regular updates and communications of programme information, including managing formal reporting requirements, highlighting risks and opportunities to stakeholders, internally and externally.
- Cultivate strong relationships with programme stakeholders including strong open working relationship with NATS.

Other duties

- Other duties within the scope and scale of the role, in response to business requirements and direction of the Line Manager and/or Director of Programme Management

This role is available as either full time or job share.

Please note, if this role is filled as a job share there will be a primary line manager that will complete the performance reviews for the Research Project Manager(s) that report to this role. There will also be a secondary line manager who will supervise the Research Project Manager(s) when the primary line manager is unavailable.

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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		
Degree or equivalent level of professional qualifications and/or experience	E	A
Degree in a relevant subject or demonstrated interest in data science and artificial intelligence;	D	A
Formal training in one or more project management processes (Scrum, Lean, Agile, Prince II etc.) as well as familiarity with project management tools and software.	D	A, I
Knowledge and Experience		
Demonstrated project management and organisational skills	E	A, I
Significant experience managing multi-disciplinary projects, involving external and internal partners	E	A, I
Significant experience in managing large UKRI funding awards (or equivalent such awards e.g. EU grants) including understanding of the terms and conditions of such funding	D	A, I
Experience working with or in industry research projects	D	A, I
Experience in monitoring and evaluating proposals;	D	A
Budget management and financial processes	E	A, I
Experience working with Finance on budget planning, reporting, reconciliations;	E	A, I
Experience negotiating, managing and monitoring contracts	E	A, I
Experience negotiating, managing and monitoring academic research funding and research contracts	E	A, I
Ability to work in uncertainty, and to map out risks/benefits of potential solutions to problems arising.	E	A, I
Structured and proactive approach to work, comfortable multi-tasking and able to re-prioritise as required.	E	A, I
Ability to renegotiate deadlines and deliverables appropriately and seeking advice as required to maintain stakeholder buy-in.	E	A, I
Experience negotiating, for example in service contracts or within projects, resource management, contract requirements, milestones;	D	A, I
Experience with research governance structures and research ethics processes;	D	A, I
Experience of line management, and matrix management	D	A, I
Experience in facilitating research using sensitive data, and information governance.	D	A, I
Previous experience in a similar role with evidence of success	D	A, I

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Communication		
Clear and effective communication skills, with and to a wide range of people and audiences at all levels (i.e. Academics, Scientists, Research Managers, and Administrators)	**E**	**A, I**
Verbal Communication Communicate more complex, specialist or conceptual information clearly and persuasively, presenting compelling arguments to influence and/or negotiate satisfactory outcomes. Communication methods are chosen to suit the audience needs and understanding and meaning is not compromised.	**E**	**A, I**
Written and electronic communication Explains complicated matters simply, tailors communication methods/media to suit the audience's needs and ensure understanding. Uses appropriate styles and arguments to influence and negotiate satisfactory outcomes. Presents complex information in formats appropriate to audiences without compromising meaning.	**E**	**A, I**
Team Development		
Provides induction activities for new team members, acting as a 'buddy' or coach to facilitate integration into the team.	**E**	**A, I**
Produces and/or provides expert support and training in relation to specific tasks or work areas. Undertakes coaching/mentoring activities providing advice, guidance and feedback to help team members work more effectively.	**E**	**A, I**
Undertakes regular staff performance reviews and appraisals, setting clear (SMART) objectives. Evaluates performance, and deals with any performance issues, identifying appropriate developmental activity, where appropriate, to ensure individuals meet the needs and expectations of their role.	**E**	**A, I**
Plans and generates training and development opportunities to meet team members' current and future learning needs, evaluating outcomes and putting learning into practice.	**D**	**A, I**
Service Delivery		
Adapts services and systems to meet stakeholders' needs and identifies ways of improving standards. Learns from issues and takes action to resolve them.	**E**	**A, I**
Decision-Making Processes and Outcomes		
Makes decisions that have limited impact on immediate team/work area but may endure for some time. Considers the wider impact of decisions and assesses outcomes.	**E**	**A, I**
Makes strategic or operational decisions collaboratively as part of a team or committee, which have potential to impact on several areas or affect the broad working practices of the organisation for some time. Ensures that options are weighed and outcomes considered.	**E**	**A, I**
Provides detailed information and advice that influences business plans and longer-term planning, having anticipated and highlighted the issues that need to be taken into account.	**E**	**A, I**
Teamwork and Motivation		
Assesses and ensures appropriate resources and support are available to enable their team and individual members to achieve both team and individual objectives.	**E**	**A, I**
Ensures that all members of the team understand what is expected of them whilst delegating work fairly and according to individual ability.	**E**	**A, I**

Leads, oversees and monitors progress of key deliverables and timescales through probation/appraisal and takes appropriate action to deal with any issues or problems	**E**	**A, I**
Analysis and Research		
Production and analysis of reports. Designs and uses data gathering and analytical methods appropriate for each investigation.	**E**	**A, I**
Recognises and accurately interprets patterns and trends. Understands when additional data is required and identifies appropriate sources. Produces reports that identify key issues and findings.	**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**

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.

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 them on 020 3862 3575, or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: 20ᵗʰ SEPTEMBER at 23.59

TERMS AND CONDITIONS

This full-time post is offered on a fixed term basis until June 2026. Job share applications are also welcome. Please indicate in your cover letter whether you are interested in the full time or job share option. The annual salary for full-time hours is £46,000 - £50,000, plus excellent benefits, including flexible working and family friendly policies, https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits

If the role is filled as a job share, hours will be semi-flexible, however at some overlapping working hours will be required for communication between the two Programme Managers 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.

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***.***