



**UNIVERSITY OF LINCOLN
JOB DESCRIPTION**

JOB TITLE	Postdoctoral Research Associate in Machine Learning Methods for Mental Health				
DEPARTMENT	School of Engineering & Physical Sciences				
LOCATION	Lincoln Campuses				
JOB NUMBER	CHS294	GRADE	7	DATE	March 2026
REPORTS TO	Dr John Atanbori				

CONTEXT

At the heart of one of the world's great historic cities, research at the University of Lincoln engages in transforming lives and communities. In recent years the city has seen significant investment in redeveloping areas of the city centre and the University was awarded the prestigious Queen's Anniversary Prize for Higher Education in 2023.

The Lincolnshire Unit for Mental Health Research (LUMHR) will be the county's first integrated and multidisciplinary unit dedicated to applied mental health research in rural, coastal, and small urban-deprived settings. Funded through the NIHR Mental Health Research Group programme, LUMHR builds on a successful NIHR Mental Health Development Award that established the region's top mental health research priorities through inclusive community engagement and network development. The Unit brings together academic, clinical, community, and lived-experience partners to address persistent mental health inequalities and strengthen the regional research ecosystem.

Hosted in the School of Engineering and Physical Sciences, this PDRA will drive LUMHR's advanced modelling work, integrating spatial, temporal, and machine learning techniques to understand crisis trajectories, service-entry patterns, and localised risk. The role sits at the intersection of data science and applied mental health research and involves close collaboration with the Lincoln Institute for Rural and Coastal Health (LIRCH), the School of Psychology, Integrated Care Board analysts, and NHS partners.

JOB PURPOSE

This post will be an independent researcher working with a significant degree of autonomy under the direction of Dr John Atanbori and the LUMHR Connect Theme Leads. The post-holder will contribute to the design and delivery of advanced analytical and methodological work across the LUMHR programme, including the development of machine learning methods, temporal and spatial models, predictive analytics, scalable data pipelines and data visualisation to examine mental health need, crisis trajectories, and system performance across rural, coastal, and small urban-deprived settings.

They will be expected to plan and sustain a programme of research activity within the Connect theme (and in collaboration with the Respond theme where relevant), produce high-quality, publishable research outputs (including methods-led outputs suitable for computer science and data science journals), and work closely with partners across academic, clinical, voluntary-sector and community organisations, including NHS and Integrated Care System analytics teams. The role will involve supporting and, where appropriate, training and collaborating with practitioner researchers, peer researchers, and students contributing to the programme.

KEY RESPONSIBILITIES

Programme of Research

- Undertake programme of research in machine learning methods, statistical and spatiotemporal modelling under the direction of Dr John Atanbori and the LUMHR Connect Theme Leads, demonstrating a significant degree of autonomy.
- Plan, implement, and contribute to research activities across the Connect theme, including the development, testing, and validation of machine learning and predictive models using large-scale, linked health and socio-environmental datasets.
- Support collaborative research activity within the Connect theme, working alongside academic colleagues, NHS and ICS analytics teams, local authority partners, practitioner researchers, peer researchers, and community stakeholders.
- Contribute to the development and refinement of [innovative, methods-led modelling approaches suited to rural and coastal contexts, including the integration of multiple complex datasets, spatiotemporal analyses, and explainable machine learning techniques.
- Develop and maintain strong collaborative links with academic, clinical, public health, community, and voluntary-sector partners, and contribute to joint programmes of research activity and system-facing analytical outputs as appropriate.
- Participate in LUMHR planning activities, internal meetings, and relevant committees, supporting the development of the Unit's analytical capacity and evidence base.

Research Outputs and Academic Development

- Lead and contribute to high-quality research outputs, including methods and applied journal articles, reports, briefings for partners, and contributions to public engagement materials.
- Present findings at internal seminars, stakeholder meetings, national/international conferences, and community dissemination events, helping to develop the external reputation of both the post-holder and LUMHR.
- Engage in professional development activities, including training, mentoring, and opportunities for skills enhancement, particularly in advanced machine learning, data science and computational methods, in line with LUMHR's focus on building the next generation of mental health researchers.

Project Management

- Plan and manage research tasks, ensuring timely delivery of work packages across the five-year programme.
- Maintain accurate documentation, data management and ethical governance standards, and reproducible, well-documented analytical workflows in accordance with University and NIHR requirements.
- Coordinate activities involving interdisciplinary colleagues, practitioner researchers, peer researchers, and community contributors, ensuring inclusive and transparent processes.
- Support the organisation of engagement activities, workshops, and community events.

Liaison and Networking

- Build and maintain effective working relationships with LUMHR partners, including ICS analytics teams, LIRCH colleagues, NHS organisations, voluntary and community sector partners, people with lived experience, and academic collaborators.
- Participate in internal LUMHR research meetings, cross-theme activities, and CPD opportunities, fostering interdisciplinary collaboration between computational, clinical, and applied research communities.

Supervision and Support

- Provide methodological and analytical guidance and collaborative support to colleagues contributing to the Connect theme and broader LUMHR programme, including research assistants, practitioner researchers, peer researchers and cross-sector fellows, supporting their development as applied mental health researchers.
- Contribute to the research development of students, including supervision of dissertation or placement projects where appropriate.
- Support inclusive, co-learning approaches that value diverse knowledge, experience, practice traditions, and ways of working.

Funding and Sustainability

Contribute significantly to the preparation of grant applications that support the continuation or expansion of Connect theme work, including methods-focused and interdisciplinary funding opportunities aligned with the post-holder's own research development.

Teaching Support

- If required, engage in teaching support activities, up to a maximum of six hours per week.
- Assist in the supervision of postgraduate research students.

In addition to the above, undertake such duties as may reasonably be requested and that are commensurate with the nature and grade of the post.

ADDITIONAL INFORMATION

Key working relationships/networks	
Internal	External
<ul style="list-style-type: none"> • LUMHR Co-Leads • LUMHR Connect Theme Leads • LUMHR Manager and support staff • Other LUMHR colleagues and co-investigators • LIRCH Director and senior team • Other research and academic staff within the Institute and College • Professional services staff • Postgraduate Research Students 	<ul style="list-style-type: none"> • Core LUMHR partners (NHS, ICS, local authority, academic, and third-sector organisations) • People and communities in Lincolnshire • LUMHR Lived Experience Advisory Panel, Steering Committee, and International Advisory Board • Mentors within the University of Nottingham’s Institute for Mental Health • Other research collaborators and partner organisations • Study sites (as applicable) • Funder (NIHR) and other relevant funding bodies • Collaborating Patient and Public Involvement (PPI) groups



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PERSON SPECIFICATION**

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Selection Criteria	Essential (E) or Desirable (D)	Where Evidenced Application (A) Interview (I) Presentation (P) References (R)
Qualifications:		
Relevant honours degree or equivalent	E	A
PhD in relevant discipline or equivalent research experience (good candidates may be accepted with doctoral degree pending)	E	A
Demonstratable specialist knowledge of machine learning methods, statistical modelling, and/or spatiotemporal or computational analytics.	E	A
Experience:		
Research experience using advanced analytical or machine learning methods with large-scale, multi-source or complex datasets	E	A/I
Experience applying spatiotemporal, geospatial, or longitudinal modelling approaches to applied research questions	E	A/I
Track record of authorship of peer-reviewed research outputs, including methods-led or applied publications	D	A/I
Familiarity with data ethics and information governance principles and practices	E	A/I
Experience working in applied, interdisciplinary, or cross-sector research settings	D	A/I
Experience of developing research and evaluation analysis plans	D	A/I
Experience of obtaining research funding (as applicant or collaborator)	D	A/I
Experience developing, adapting, or critically evaluating analytical or machine learning methods for applied research contexts	E	A/I
Experience contributing to analytical tools, software, dashboards, or reusable codebases as part of research outputs.	D	A/I
Skills and Knowledge:		
Ability to design, conduct, and project manage original, methods-led research in the project area	E	A/I
Ability to work appropriately and professionally with sensitive, potentially distressing, or emotionally challenging material relating to mental health, wellbeing, trauma, crisis, or suicide	E	A/I
Excellent written communication, including ability to write high-quality research reports and outputs	E	A/I

Ability to adaptively and effectively communicate complex information to diverse audiences, including community partners	E	A/I
Experience presenting research to academic, clinical, community or public audiences	D	A/I
Strong knowledge of machine learning and, predictive modelling approaches, such as classification, regression, time-series, clustering or anomaly detection	E	A/I
Knowledge of geospatial or spatiotemporal data analysis frameworks	E	A/I
Understanding of mental health inequalities, particularly in rural, coastal or underserved settings	D	A/I
Ability to prioritise own workload and work to specified deadlines under pressure	E	A/I
Proficiency in at least one programming language commonly used for machine learning or data science (e.g. Python, R), and experience using relevant analytical or ML libraries (e.g. Tensorflow).	E	A/I
Experience developing reproducible analytical pipelines using version control, containerisation, or workflow tools (e.g. Git, Docker).	D	A/I
Key Competencies, Personal and Leadership Attributes:		
Good organisational skills and accurate record keeping	E	I
Ability to work independently and show initiative when appropriate	E	I
Ability to work collaboratively with colleagues and partners from diverse backgrounds, including practitioner researchers, peer researchers, and lived-experience contributors	E	I
Ability to build good working relationships with academic, clinical, community and policy partners	E	I
Commitment to inclusive, ethical and participatory research practice	E	I
Commitment to Responsible Research and Innovation values	E	I
Enthusiasm, commitment and willingness to engage in professional development	E	I
Business Requirements:		
Willingness to travel across Lincolnshire, and to participate in in-person meetings, engagement activities, and place-based data collection as required by the programme	E	I

Essential Requirements are those, without which, a candidate would not be able to do the job. **Desirable Requirements** are those which would be useful for the post holder to possess and will be considered when more than one applicant meets the essential requirements.

Author	JA/NGM/DD/HM	PBP	LW
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