



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

**Research Fellow in AI-Native Telecommunications Systems,
Faculty of Engineering and Physical Sciences**



Salary: Grade 7 (£41,064 – £48,822 p.a.)

Reporting to: Dr Maryam Hafeez

Reference: EPSEE1158

Closing date: Sunday 16 August 2026

Fixed term (Until 30 November 2028 - to complete specific time limited work)

Location: Leeds main campus (with scope for hybrid working)

We are open to discussing flexible working arrangements

Research Fellow in AI-Native Telecommunications Systems, School of Electronic and Electrical Engineering.

Are you an ambitious researcher with expertise in artificial intelligence, large language models or retrieval-augmented generation, looking to tackle real-world healthcare challenges? Do you have experience developing and evaluating advanced AI systems and want to translate your research into technologies that can support earlier identification of respiratory disease? Would you like to lead the development of novel conversational AI solutions and real-world demonstrators as part of a major interdisciplinary research project?

Overview of the Role

We are seeking a highly motivated Research Fellow to join the EPSRC-funded AIRE project, developing next-generation AI systems for early identification of respiratory conditions through telephone-based interactions. You will work at the intersection of artificial intelligence, telecommunications and digital health, contributing to the design of conversational AI capable of conducting clinical history-taking, analysing speech and language signals, and supporting earlier intervention for respiratory disease.

Working with an interdisciplinary team of engineers, computer scientists and healthcare professionals, you will develop and evaluate novel approaches for conversational AI, multimodal machine learning, large language models, speech analytics and clinical decision support. The project aims to improve access to healthcare through scalable, accessible telephone-based assessment technologies, helping identify individuals who may benefit from further clinical investigation.

You should have a strong background in one or more of the following areas: artificial intelligence, machine learning, natural language processing, speech processing, data science, digital health, telecommunications, or software engineering. This is an exciting opportunity to contribute to impactful research with clear societal benefit while working in a collaborative environment at the forefront of AI-enabled healthcare innovation.



Main duties and responsibilities

- Leading the design, development and evaluation of artificial intelligence methods for telephone-based clinical assessment and early identification of respiratory conditions;
- Developing conversational AI agents capable of conducting clinical history-taking, analysing patient interactions and supporting clinical decision-making;
- Designing, implementing and evaluating machine learning, natural language processing and speech analysis algorithms using real-world healthcare datasets;
- Collaborating with healthcare professionals to translate clinical requirements into robust and clinically relevant AI solutions;
- Developing and maintaining software tools, data processing pipelines and experimental platforms to support project objectives;
- Analysing and interpreting experimental results, producing high-quality research outputs and recommendations for future system development;
- Leading the development and evaluation of a real-world demonstrator showcasing the end-to-end operation of AI-enabled telephone-based respiratory assessment technologies;
- Co-ordinating research activities with project partners and contributing to project planning, reporting and delivery of key milestones;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own research;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;



- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

Qualifications and skills

Essential

- A PhD (or have submitted your thesis before taking up the role) in Electronics and Electrical Engineering or a closely allied discipline;
- A strong research background in one or more of the following areas: Retrieval-Augmented Generation (RAG) systems using vector databases, embedding models and document retrieval pipelines and/or knowledge representation, including ontologies, knowledge graphs, semantic web technologies or graph databases;
- Strong programming skills in Python and experience with modern AI frameworks such as PyTorch, LangGraph, LangChain, LlamaIndex or equivalent;
- Strong background in agentic AI planning, sequential decision making, probabilistic reasoning, including techniques such as Markov Decision Processes (MDPs), Partially Observable Markov Decision Processes (POMDPs), Bayesian inference or information-theoretic decision making;
- Experience in analysing and interpreting complex datasets and communicating findings through high-quality reports, publications or presentations;
- Evidence of the ability to conduct independent research and contribute effectively within a multidisciplinary research team;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer-reviewed publications in international journals;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- A proven ability to work well both independently and in a team;
- A strong commitment to your own continuous professional development.



Desirable

- Experience of pursuing external funding to support research;
- Experience modelling dialogue state, task-oriented dialogue systems or conversational AI;
- Experience of working with healthcare, clinical or biomedical datasets, including an understanding of data governance, ethics and regulatory considerations;
- Experience of developing research demonstrators, prototypes or real-world technology deployments involving multiple software and hardware components.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23:59** (UK time) on the advertised [closing date](#).

Contact information

To explore the post further or for any queries you may have, please contact:

[Dr. Maryam Hafeez](#), Associate Professor in Communication Systems and Networks

Email: M.Hafeez@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering](#) and the School of [Electronic and Electrical Engineering](#).

Working at Leeds

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.



A diverse workforce

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Engineering and Physical Sciences are proud to have been awarded the Athena SWAN [Silver](#) Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

The Faculty of Engineering and Physical Sciences are proud to have been awarded the Athena Swan Silver Award from [AdvanceHE](#). The [Athena Swan Charter](#) is a framework which is used across the globe to support and transform gender equality within higher education and research. Our [equality and inclusion webpage](#) provides more information.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found under the 'Accessibility' heading on our [How to Apply](#) information page or by getting in touch by emailing HR via hr@leeds.ac.uk.

Criminal Record Information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.



Salary Requirements of the Skilled Worker Visa Route

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information, please visit [the Government's Skilled Worker visa page](#).

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information, please visit [the Government's page, Apply for the Global Talent visa](#).

