Job Description

Associate Professor in Artificial Intelligence applied to Health Care

Department: UCL Institute of Health Informatics

Salary: Grade 9

Hours: Full time, Permanent

Location: Hybrid / 222 Euston Road, London

Reports to:

Professor Laura Shallcross, Institute Director and Professor of Public Health and Translational Data Science

Context

This post is suitable for a talented academic in the role of Associate Professor in the field of Artificial Intelligence (AI), Large language Models (LLM), and/or Natural Language Processing (NLP) applied to Health Care. This is an academic appointment, and the post holder will be expected to maintain a rich and balanced portfolio of education, research, external engagement, and institutional citizenship activities. This post is offered on a permanent basis, subject to a successful probationary period where applicable.

UCL and the Institute of Health Informatics

UCL established the Institute of Health Informatics (IHI) in August 2014 in the Faculty of Population Health Sciences. The aim of IHI is to conduct high quality data-intensive research to improve health at local, national, and international levels.

The Faculty of Population Health Sciences has established itself as UCL's largest research-based faculty, encompassing eight institutes. More information available at www.ucl.ac.uk/population-health-sciences/.

You will develop your own research projects and research group within the remit of our Institute.

The aims of IHI are:
1. To carry out high quality research particularly where the scale or detail of data allows scientific advances of relevance to decision makers.
2. To build research capability – the methods and tools – for working with diverse forms of health data.
3. To disseminate our research and education through undergraduate and postgraduate teaching and training relevant to health professionals and health services providers.
4. To develop our staff as data scientists for health, equipped to deliver successful inter-disciplinary team science.
5. To grow national and international collaborations, starting with new partnerships across UCL, other London universities and our local NHS Trusts.

Since its foundation, the IHI has become a hub for cutting edge research at the intersection of health data science, epidemiology, and genomics. Researchers at the institute work with a range of academic, clinical, and industrial collaborators.

Our staff have expertise in data science, epidemiology, public health, statistics, health informatics, natural language processing, clinical research informatics, a range of clinical specialties, and computer science. This inter-disciplinary mix provides the scientific basis for an internationally competitive research and teaching programme.

Artificial Intelligence, Large Language Models, and Natural Language Processing at IHI

IHI has an active research theme in AI and hosts a UKRI Centre for Doctoral Training in AI enabled healthcare. AI and Machine Learning are key topics in our taught masters' programmes and also deliver training on AI in the UCL Medical Degree (MBBS) programme.

We work closely with colleagues in UCL Centre for Artificial Intelligence and the UCL Centre for Medical Image Computing. We also share activities and collaborate with world leading AI groups in ophthalmology and neuroscience. UCL is unique in hosting three Biomedical Research Centres and our close links with UCL Hospitals, GOSH and Moorfields NHS Trusts mean that our research have unparalleled access to unique collections of patient data.

The Institute has unrivalled access to clinical data from the UCL Hospitals NHS Trust, the British Heart Foundation Data Science Centre, the UK Clinical Practice Research Datalink, UK Hospital Episode Statistics, and multiple datasets from the UK Office of National Statistics to list only a few.

Main Working Relationships

These may vary, depending on the particular field of the appointee:

- Professor Laura Shallcross, Professor of Public Health and Translational Data Science;
- Professor Paul Taylor, Professor of Health informatics;
- Professor Richard Dobson, Professor of Biomedical and Health Informatics;
- Professor Harry Hemingway, Professor of Clinical Epidemiology;
- Professor Spiros Denaxas, Professor of Biomedical Informatics;
- Dr Honghan Wu, Associate Professor of Health Informatics;
- Dr Anoop Shah, Associate Professor at IHI and Clinical Consultant at UCL Hospitals;
- Dr Steve Harris, Principal Research Fellow in Translational Health Informatics and Consultant in Critical Care.

Duties and responsibilities

As a senior member of the Institute, the post holder will lead their own research, in line with the existing portfolio of the IHI and UCLH BRC. They will demonstrate an active engagement with the interface between research and education by delivering teaching and supervising students; and will be expected to support the development of early career researchers.

Research

The post holder will be expected to develop, lead, and grow a collaborative research programme in the fields of Artificial Intelligence (AI), Large language Models (LLM), and/or Natural Language Processing (NLP) applied to Health Care research and Clinical Informatics. The successful candidate will be supported to attract funding for their own research and enterprise activities, and to accumulate a rich portfolio of outputs, including publications in internationally recognised journals. Working across disciplines is core to IHI's mission and the post-holder will have the opportunity to collaborate with researchers from across UCL and our partner hospitals.

Education

Academic staff are expected to contribute to education and other related departmental activities, at around 40% of their contracted time. The Institute will advance opportunities to develop and deliver teaching, marking, and designing courses on undergraduate and graduate programmes, postgraduate research supervision, our short-courses programme as well as contributing informal advice and training of other research staff and students as appropriate.

Citizenship

At IHI we are proud of our commitment to developing and maintaining an inclusive culture. All our staff are expected to promote and embody these values and to contribute to ensuring that the Institute is a supportive environment where everyone can flourish.

Management and Leadership

The post holder will take an active role in the effective running of the Institute, participating in steering committees and sitting in or chairing committees e.g.

Equality & Diversity, Appointment and Selection, or Research Management.

The post holder will provide expertise to support national initiatives in research, education, and knowledge transfer. This will include presentation of research findings at national and international meetings, and the establishment of partnerships with other professionals and organisations in the field.

Personal development opportunities

We will support the post holder to develop their career. They will be supported to formulate a personal development plan and to capitalise on training opportunities at the Institute and across UCL.

<u>Additional Duties</u>

- Maintain an awareness and observation of Fire, Health and Safety Regulations.
- Adopt and promote awareness of UCL's Environmental Sustainability Policy and other initiatives.
- Any other duties appropriate to the grade of the role as required by their line manager.

In carrying out the above duties, the appointee is expected to adhere to UCL policies including Financial Regulations. The appointee will be expected to carry out any additional duties as may reasonably be required within the general scope and level of the post. As duties and responsibilities change, the job description will be reviewed and amended in consultation with the post holder.

Person specification

Criteria	Essential or Desirable
Qualifications, experience, and knowledge	
Higher academic degree e.g., PhD in a relevant discipline, or suitable relevant experience	Essential
Appropriate track-record of high quality research outputs in the field of Artificial Intelligence / Machine Learning with impact at a national and ideally international level, e.g. publications in renowned journals and appearances in international conferences	Essential
Clear and ambitious plans for future research in relevant areas	Essential
Some experience in teaching and supervision at undergraduate and/or postgraduate level in large or small group settings with the demonstrable ability to deliver innovative teaching at both levels with some guidance in at least two of the following areas: Artificial Intelligence, Ethics / bias in AI, Machine Learning, Generative AI, Data Science, Multimodal AI (Vision, NLP, Audio, Game AI), Causal Machine Learning, Explainable AI.	Essential
Evidence of the development and delivery of research-led teaching and assessment at undergraduate and/or postgraduate level in the subject area of Artificial Intelligence	Desirable
Higher education teaching accreditation, such as Associate Fellow or Fellow of the Higher Education Academy in the UK or overseas equivalent, or ability to obtain accreditation	Desirable
Skills and abilities	
Proven ability and commitment to carry out high quality original research	Essential
Ability in developing research proposals, bidding for and securing external research funding from multiple sources, and subsequent effective award management skills	Essential
Ability to write, understand, and edit code in at least one language (e.g. Python, C, Java, etc.) and familiarity with scientific libraries and popular APIs	Essential
Ability to build effective partnerships with diverse audiences	Essential
Excellent communication skills/verbal and written; good command of written and spoken English, and ability to communicate with colleagues within and outside the Institute: this includes general liaison and postgraduate teaching	Essential
Personal attributes	
The highest ethical and professional standards in research and education	Essential
Promoting a culture of innovative working	Essential
Involvement in continuing professional development	Essential