

## Health Data Research UK

### Applicant Pack

#### Job description and person specification

<b>Post:</b>	Chief Solutions Architect
<b>Location:</b>	Flexible. Primary base could be anywhere in the UK (working from home) but must be willing and able to travel to London and elsewhere (mainly UK) in connection with the role.
<b>Salary:</b>	£90,000 -£105,000
<b>Reporting to:</b>	CTO, HDR UK
<b>Contract:</b>	<b>Permanent</b> , Full time

#### About Health Data Research UK

Health Data Research UK (HDR UK) is accelerating trustworthy use of health data to enable discoveries that improve people's lives.

We are the national institute for health data science. Our vision is for large-scale data to benefit every interaction with patients, every clinical trial and every biomedical discovery, and to transform public health.

The UK is in a unique position to realise the potential of health data, thanks to the NHS and its cradle-to-grave records for a population of over 65 million people.

Safe and secure use of this data could improve treatments, deliver better health care and save lives. It could help tackle some of the biggest health challenges worldwide, including cancer, diabetes and cardiovascular disease.

However, access to this data for researchers is often a lengthy, fragmented process, meaning the potential for improving healthcare is far from being realised in full.

We work in partnership with the NHS, industry, charities and universities to realise the potential of the UK's health data in life-changing research. Patients and the public are actively involved in shaping HDR UK's work and ensuring it delivers public benefit.

The Institute played a major role in the COVID-19 pandemic, working with the NHS and collaborators internationally to link and coordinate the use of large-scale data. With these resources, scientists and doctors could understand more about this new disease, identify which drugs were effective and provide evidence to allow the NHS and policymakers to respond to the challenge.

Our successes include:

- A Trusted Research Environments (TRE) for England was created early in the pandemic with health data covering >54 million people, thanks to a collaboration between NHS Digital and HDR UK through its British Heart Foundation (BHF) Data Science Centre. TREs are highly secure computing environments that provide remote access to health data.
- During the roll out of the Pfizer-BioNTech and Oxford-AstraZeneca vaccines against Covid-19, it was vital to understand how they performed in the population. A team supported by HDR UK through the BREATHE Health Data Research Hub were able to rapidly show the high protection offered by the vaccines after a single dose, thanks to assembling linked health data for 99% of the Scottish population.
- Nearly half a million people missed out on starting medication to lower their blood pressure during the Covid-19 pandemic, according to research enabled by the BHF Data Science Centre at HDR UK. The research included 1.32 billion records of medications dispensed to 15.8 million people in England, Scotland and Wales between 1 April 2018 and 31 July 2021.
- The Green Algorithms initiative promotes more environmentally sustainable computational science and is run by Loïc Lannelongue and Michael Inouye at HDR UK Cambridge. They have built tools for carbon footprint estimation, raised awareness about the environmental impacts of algorithms and driven change in the computational science community.
- A significant landmark early in 2024 saw the first research study of health records for 67 million people in all four UK nations. It looked at gaps in Covid-19 vaccine coverage and found that between a third and a half of the populations of the four UK nations had not had the recommended number of vaccinations and boosters by summer 2022. The approach could be extended to many other areas of medicine with great potential for new discoveries in the understanding and treatment of disease.

HDR UK is a virtual institute, with staff and partners in all four nations of the UK and an office in central London. We are an independent, registered charity with five years of core funding from nine of the UK's leading medical research funders, including UK Research and Innovation, the Department of Health and Social Care in England and equivalents in Northern Ireland, Wales and Scotland, and leading medical research charities.

At Health Data Research UK, we employ talented individuals who bring their own unique skills and experience to support the Institute's vision and benefit the whole team. Our values of transparency, optimism, respect, courage and humility guide how we work together within HDR UK, with our partners and other stakeholders.

## HDR UK's strategy



Our five-year objectives are to:

**1. Accelerate trustworthy data use by sorting the data**

- Make it easier and quicker for researchers to find, access and use high-quality, large-scale data
- Fix the technical challenges needed for swift, safe and secure data use, by assembling innovative infrastructure solutions
- Increase health research efficiency and productivity by accelerating adoption of the FAIR (Findable, Accessible, Interoperable and Reuseable) data principles

**2. Improve people's lives by unlocking the power of data**

- Deliver cutting-edge research that harnesses large-scale data to change health policy and practice
- Exemplify trustworthy data use to deliver research that was previously impossible
- Test and improve the infrastructure so it serves all researchers

**3. Shape the future of health data research**

- Connect data, people and organisations to bring about cultural change and realise the UK's potential to be at the forefront of health data innovation
- Develop people and teams with diverse perspectives and skills needed to deliver health data research
- Embed good practice in patient and public engagement and involvement to build confidence in health data research for public benefit by increasing transparency and trustworthiness.

## Purpose of the post

This is a senior role covering 3 key areas:

- **Solution Architecture:** Software and solution architect working across the range of technical solutions developed across the institute, both by the central technology team and HDR UK partners.
- **Cloud Infrastructure:** Responsibility for the internal cloud-based systems hosting our software and the line management of the dev-ops team.
- **Business Systems:** Strategic overview of the IT side of our outsourced business systems and support contracts, along with line management of the systems team.

HDR UK requires the services of an experienced Chief Solution Architect to lead technology services and solutions across the organisation, leading and maintaining technical strategies, architectures and roadmaps.

The role will involve solution design production and review for all aspects of the HDR UK technology product ecosystem (technical design authority).

The role reports to HDR UK's CTO.

**Main Responsibilities:**

- Solution Architecture:
  - Chief Solution Architect for the whole of HDR UK
  - Lead the development and maintenance of HDR UK's solution architecture, big data and integration strategies, frameworks, standards and technical roadmaps
  - Lead the architecture oversight of new technology components including vendor selections, software design, delivery, security and integrations. Explaining complex software options to multiple stakeholders
  - Design the specifications, models and guidelines within a coherent architectural blueprint to meet user requirements reflecting HDR UK's established development principles
  - Documenting and approving designs in Confluence and input into the technical backlog in JIRA
  - Identify, review and make technology recommendations on new HDR UK strategic opportunities and projects to ensure they conform with a consistent architecture framework.
  - Provide ad hoc specialist input to projects, and incorporate these into strategic plans, frameworks and roadmaps
  - Be on hand to guide development teams through complex design issues
- Cloud Infrastructure
  - Line management responsibility for the dev-ops engineers who design and support the cloud-based infrastructure running our externally facing products and services.
  - Responsibility for our cloud-based technical infrastructure including its architecture and processes
- Business Systems
  - Responsible for IT input into our business systems (most of which are outsourced and include a wide range of SaaS/PaaS/IaaS services).
  - Responsible for the line management of the systems team, who manage our relationship with our external support service.
  - Provide technical expertise and oversight into the selection of IT products and services.
  - Drafting and review of a range of policies and processes including our IT policy.
  - Responsible for achieving and maintaining Cyber Essentials certification and, NHS Digital Toolkit.
  - Responsible for oversight (with the business system team) towards future accreditations, such as ISO27001.
  - Working with the Systems Manager on strategic oversight of all Business Systems.
  - Assisting with high priority incidents where required relating to core business systems.
  - Working with both existing and prospective suppliers (and the HDR UK procurement team) to manage vendor relationships, where needed.
  - Providing cover for the Systems Manager during any period of leave.
  - Although not necessarily involved in daily operations, an ability to assist on a wide range of technology issues, where they may arise.

- Assisting the systems team with project scoping/planning and communications to internal and external stakeholders.

**Planning and Organising:**

- Facilitating the development and regular updating of an integrated high-level roadmap across HDR UK products working across Product Owners. Tracking of and reporting on all aspects of project management cycle including progress, budget, milestones etc. to key internal/external stakeholders
- Creating processes and systems to enable efficient working and process improvement, including working with others to develop tracking systems
- Inputting into our business systems strategy

**Decision making:**

- The post-holder will make all day-to-day operational decisions for their own workload
- With support from the Chief Technology Officer, the Chief Solution Architect will identify, initiate and develop opportunities for collaborative working with the members of the HDR UK extended technical team, relevant national and international partners and organisations
- Technical project decisions necessary in daily scrums to advance progress of all technical partner projects
- Direct involvement in all product & solution selections

**Leadership:**

- Evangelist for HDR UK technologies building relationships with peers at conferences & events
- Lead the design of how our software and products interoperate and strategically align
- Provide mentorship and professional development opportunities for the Systems Manager and Dev-ops team, fostering a culture of growth and learning
- Support our partners developing software and services to align with our technology strategy and develop scalable, robust, enterprise level code

**Continuous Improvement:**

HDR UK is dedicated to continuous improvement through our quality management system and demonstrated by our commitment to achieve ISO 9001 accreditation. The post-holder will review, analyse, identify and implement opportunities for quality improvement within their specialism and as part of the wider team through our strategy development and internal audit processes.

**Key contacts / relationships:**

The post holder will build and maintain effective working relationships both within HDR UK and externally with 3<sup>rd</sup> party System Integrators, software vendors, infrastructure providers and end-users (academics and corporate users). Work closely with the internal product owners and HDR UK Design teams.

## Knowledge, skills and experience

### Essential:

- At least 7 years' software development experience with knowledge in both Front and Back-end languages, such as; ReactJS, Python, PHP, RESTful API design, GraphQL, JSON, XML and CSS. While a strong software development background is essential for understanding our technology stack, there is no requirement to be hands on
- At least 5 years' senior experience as either a Technical Architect or Solutions Architect producing technical and solution designs and leading a design authority function
- Experience in IT product vendor analysis
- Ability to analyse complex scenarios, distil key points and take pragmatic action to move projects forwards in an agile manner
- High quality and concise communication skills, written and verbal. Able to persuade, motivate and lead others at all levels, and to explain concepts without technical jargon.
- An ability to act at pace with a high degree of accuracy and independence.
- Ability to work in self-driven fashion in a dynamic, fast-moving international environment establishing structures and processes, clear information flow and ensuring effective stakeholder engagement
- Ability to see the big strategic picture in combination with flexibility to operate at a tactical, hands-on level
- Ability to communicate technical issues and solutions clearly to a range of audiences.
- Expertise in cyber-security
- Experience in drafting IT policies
- Experience in architecting cloud-based infrastructures
- Experience in providing 3<sup>rd</sup> line support for infrastructural issues
- Experience in developing and implementing strategic plans
- Experience of working as a design authority
- Alignment to the HDR UK values

### Desirable:

- Experience working with health data and health organisations and an understanding of Information Governance requirements, data curation and data standards for health data.
- Experience using Confluence, JIRA, Trello and similar Agile project management tools.
- Experience of Information Governance processes and requirements.

Commented [PH1]: We still want this?



Health Data Research UK

- An understanding of research delivery within the public sector, academia and industry.
- Experience of implementing Cyber Essentials, ISO 9001 or ISO 27001
- Experience with identity management and standards
- Experience with Trusted Research Environments
- 

## Dimensions

- This is a full-time 5 day per week role
- Travel may be required to HDR UK locations and partner organisations
- Primarily home-based, with occasional travel to our London office and other locations

## Application Process

Please apply through our online recruitment platform. You will also be asked to upload a short covering letter and CV. Please upload this as one document.

If you have any queries please contact [recruitment@hdruk.ac.uk](mailto:recruitment@hdruk.ac.uk)

## HDR UK's values

HDR UK's values guide how we work together within HDR UK and with our partners and other stakeholders:

1. **Transparency:** we will share information, insights and innovations so that we learn faster together.
2. **Optimism:** we believe that we can make things better, that we can do things differently and that we can overcome challenges to create a new and thriving health data ecosystem that benefits patients and the public, the NHS, scientific discovery and industry.
3. **Respect:** we deliver better results when we work in a truly interdisciplinary way. We listen, share and respect a diversity of thought and opinion, perspective and experience. We are inclusive - leveraging and fairly attributing the expertise and capabilities of others.
4. **Courage:** we are leading the way and will be prepared to try new things, take risks, embrace ambiguity and challenge the status quo. We will contribute opinions to shape the future of health data research.
5. **Humility:** we have a lot to learn from others; and aim to be free from pride and arrogance.

## Equal Opportunities Policy Statement

Health Data Research UK is an equal opportunities employer, and as such aims to treat all employees, consultants and applicants fairly. It is our policy to provide employment equality to all, irrespective of:



- Gender, including gender reassignment
- Marital or civil partnership status
- Having or not having dependants
- Religion or belief
- Race (including colour, nationality, ethnic or national origins)
- Disability
- Sexual orientation
- Age

We are opposed to all forms of unlawful and unfair discrimination. All job applicants and employees who work for us will be treated fairly and will not be unfairly discriminated against on any of the above grounds. Decisions about recruitment and selection, promotion, training or any other benefit will be made objectively and without unlawful discrimination. Our diversity and inclusion policy is [here](#).